Algebra 1 FSA Countdown

Algebra 1 EOC FSA Mathematics Reference Sheet

Customary Conversions

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric Conversions

1 meter = 100 centimeters
1 meter = 1000 millimeters
1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 year = 365 days
1 year = 52 weeks

Test Length

This table provides the approximate range for the number of items on each test.

Grade/Course	Number of Items
3	60–64
4	60–64
5	60–64
6	62–66
7	62–66
8	62–66
Algebra 1	64–68
Algebra 2	64–68
Geometry	64–68
Note: Approximately 6–10 items on all of the tests listed above are experimental (field test) items and are included in the ranges above but are not included in students' scores.	

Sessions and Times

Grade/Course	Administration Time	Number of Sessions*	Computer-Based in 2015
3	160 minutes	2	No
4	160 minutes	2	No
5	160 minutes	2	Yes
6	180 minutes	3	Yes
7	180 minutes	3**	Yes
8	180 minutes	3**	Yes
Algebra 1	180 minutes	2**	Yes
Algebra 2	180 minutes	2**	Yes
Geometry	180 minutes	2**	Yes
*All sessions are administered over two days.			
**Session 1 is the non-calculator portion of each assessment.			

Percentage of Computer-Based Test Composed of Technology-Enhanced Items

Grade/Course	Percentage Range
Grades 5-8 Mathematics*	25%–50%
Algebra 1, Geometry, Algebra 2 EOCs	40%–60%
* Grades 3 and 4 Mathematics tests, once computer based, will also be composed of 25%–50% TEIs.	

Algebra 1 EOC Standards Coverage

Reporting Category	Standard	% of Test
Algebra and Modeling	MAFS.912.A-APR.1.1	41%
	MAFS.912.A-CED.1.1 Also Assesses MAFS.912.A-REI.2.3 and MAFS.912.A-CED.1.4	
	MAFS.912.A-CED.1.2 Also Assesses MAFS.912.A-REI.3.5, MAFS.912.A-REI.3.6, and MAFS.912.A-REI.4.12	
	MAFS.912.A-CED.1.3	
	MAFS.912.A-REI.1.1	
	MAFS.912.A-REI.2.4	
	MAFS.912.A-REI.4.11 Also Assesses MAFS.912.A-REI.4.10	
	MAFS.912.A-SSE.2.3 Also Assesses MAFS.912.A-SSE.1.1 and MAFS.912.A-SSE.1.2	
Functions and Modeling	MAFS.912.F-BF.2.3	40%
	MAFS.912.F-IF.1.2 Also Assesses MAFS.912.F-IF.1.1 and MAFS.912.F-IF.2.5	
	MAFS.912.F-IF.2.4 Also Assesses MAFS.912.F-IF.3.9	
	MAFS.912.F-IF.2.6 Also Assesses MAFS.912.S-ID.3.7	
	MAFS.912.F-IF.3.8 Also Assesses MAFS.912.A-APR.2.3 and MAFS.912.F-IF.3.7	
	MAFS.912.F-LE.1.1 Also Assesses MAFS.912.F-LE.2.5	
	MAFS.912.F-LE.1.2 Also Assesses MAFS.912.F-BF.1.1 and MAFS.912.F-IF.1.3	
	MAFS.912.F-LE.1.3	
Statistics and the Number System	MAFS.912.N-RN.1.2 Also Assesses MAFS.912.N-RN.2.3 and MAFS.912.N-RN.1.1	19%
	MAFS.912.S-ID.1.1	
	MAFS.912.S-ID.1.2 Also Assesses MAFS.912.S-ID.1.3	
	MAFS.912.S-ID.2.5	
	MAFS.912.S-ID.2.6 Also Assesses MAFS.912.S-ID.3.8 and MAFS.912.S-ID.3.9	
Total Standard Groupings	21	100%

Florida Standards Assessments Test Item Descriptions

The Florida Standards Assessments (FSA) are composed of test items that include traditional multiple-choice items, items that require students to type or write a response, and technology-enhanced items (TEI). Technology-enhanced items are computer-delivered items that require students to interact with test content to select, construct, and/or support their answers. Currently, there are nine types of TEIs that may appear on computer-based assessments for FSA Mathematics.

Technology-Enhanced Item Types – Mathematics

1. **Editing Task Choice** – The student clicks a highlighted word or phrase, which reveals a drop-down menu containing options for correcting an error as well as the highlighted word or phrase as it is shown in the sentence to indicate that no correction is needed. The student then selects the correct word or phrase from the drop-down menu. For paper-based assessments, the item is modified so that it can be scanned and scored electronically. The student fills in a circle to indicate the correct word or phrase.
2. **Editing Task** – The student clicks on a highlighted word or phrase that may be incorrect, which reveals a text box. The directions in the text box direct the student to replace the highlighted word or phrase with the correct word or phrase. For paper-based assessments, this item type may be replaced with another item type that assesses the same standard and can be scanned and scored electronically.
3. **Hot Text** –
   a. **Selectable Hot Text**–Excerpted sentences from the text are presented in this item type. When the student hovers over certain words, phrases, or sentences, the options highlight. This indicates that the text is selectable ("hot"). The student can then click on an option to select it. For paper-based assessments, a "selectable" hot text item is modified so that it can be scanned and scored electronically. In this version, the student fills in a circle to indicate a selection.
   b. **Drag-and-Drop Hot Text**–Certain numbers, words, phrases, or sentences may be designated "draggable" in this item type. When the student hovers over these areas, the text highlights. The student can then click on the option, hold down the mouse button, and drag it to a graphic or other format. For paper-based assessments, drag-and-drop hot text items will be replaced with another item type that assesses the same standard and can be scanned and scored electronically.
4. **Open Response**–The student uses the keyboard to enter a response into a text field. These items can usually be answered in a sentence or two. For paper-based assessments, this item type may be replaced with another item type that assesses the same standard and can be scanned and scored electronically.
5. **Multiselect** – The student is directed to select all of the correct answers from among a number of options. These items are different from multiple-choice items, which allow the student to select only one correct answer. These items appear in the online and paper-based assessments.
6. **Graphic Response Item Display (GRID)**- The student selects numbers, words, phrases, or images and uses the drag-and-drop feature to place them into a graphic. This item type may also require the student to use the point, line, or arrow tools to create a response on a graph. For paper-based assessments, this item type may be replaced with another item type that assesses the same standard and can be scanned and scored electronically.
7. **Equation Editor** – The student is presented with a toolbar that includes a variety of mathematical symbols that can be used to create a response. Responses may be in the form of a number, variable, expression, or equation, as appropriate to the test item. For paper-based assessments, this item type may be replaced with a modified version of the item that can be scanned and scored electronically or replaced with another item type that assesses the same standard and can be scanned or scored electronically.
8. **Matching Item** – The student checks a box to indicate if information from a column header matches information from a row. For paper-based assessments, this item type may be replaced with another item type that assesses the same standard and can be scanned and scored electronically.
9. **Table Item** – The student types numeric values into a given table. The student may complete the entire table or portions of the table depending on what is being asked. For paper-based assessment, this item type may be replaced with another item type that assesses the same standard and can be scanned and scored electronically.

Algebra 1 Standards		Review Week										IP	# times
Domain	Standard	1	2	3	4	5	6	7	8	9	10	Semester	reviewed
Algebra and Modeling (41%)	A-APR.1.1					X						2	5
	A-CED.1.1								X	X		2	10
	A-CED.1.2								X			2	5
	A-CED.1.3	X										1	5
	A-CED.1.4			X								1	5
	A-REI.1.1	X										1	5
	A-REI.2.3			X								1	5
	A-REI.2.4					X						2	5
	A-REI.3.5		X									1	5
	A-REI.3.6		X								X	1	10
	A-REI.4.10								X			1	5
	A-REI.4.11								X			2	5
	A-REI.4.12		X								X	1	10
	A-SSE.1.1					X						1	5
	A-SSE.1.2					X						2	5
	A-SSE.2.3					X					X	2	10
Functions and Modeling (40%)	A-APR.2.3									X		2	5
	F-BF.1.1			X								1	5
	F-BF.2.3								X			2	5
	F-IF.1.1							X				1	5
	F-IF.1.2							X				2	5
	F-IF.1.3			X								1	5
	F-IF.2.4							X				2	5
	F-IF.2.5							X				2	5
	F-IF.2.6		X									1	5
	F-IF.3.7									X	X	2	10
	F-IF.3.8									X		2	5
	F-IF.3.9							X				1	5
	F-LE.1.1				X							1	5
	F-LE.1.2			X							X	1	10
	F-LE.1.3						X					2	5
	F-LE.2.5				X							1	5
	S-ID.3.7		X									1	5
Statistics & Number System (19%)	N-RN.1.1	X										1	5
	N-RN.1.2	X								X		1	10
	N-RN.2.3	X										1	5
	S-ID.1.1						X					2	5
	S-ID.1.2						X					2	5
	S-ID.1.3						X					2	5
	S-ID.2.5						X					2	5
	S-ID.2.6				X							2	5
	S-ID.3.8				X							1	5
	S-ID.3.9				X							1	5

Name: _____ Date: _____

Algebra 1: Week 1 FSA Countdown Period: _____

Day 1

1. **A-CED.1.3**
   Max purchased a box of green tea mints. The nutrition label on the box stated that a serving of three mints contains a total of 10 calories. Write an equation that represents C(x), where C(x) represents the number of Calories in *x* mints. A full box of mints contains 180 Calories. Determine the total number of mints in the box.

2. **A-REI.1.1**
   Judy solved the quadratic equation $x^2 - 16 = 0$ using the following steps.

   Step 1: $x^2 - 16 = 0$
   Step 2: $(x - 2)(x + 8) = 0$
   Step 3: $x - 2 = 0$ or $x + 8 = 0$
   Step 4: $x = 2$ or $x = -8$

   Which statement is *true* about Judy's method?

   A. Judy made a mistake between Steps 1 and 2.
   B. Judy made a mistake between Steps 2 and 3.
   C. Judy made a mistake between Steps 3 and 4.
   D. Judy solve the equation correctly.

3. **N-RN.1.1**
   An equation is shown below. Which statement *correctly* explains what is the missing value?
   $(4^2 \cdot 4^b \cdot 4^{-3}) = 4^{(2+b+\square)}$

   A. The missing value is 3 because $4^2 \cdot 4^b \cdot 4^{-3} = 4^{(2+b+3)}$
   B. The missing value is -1 because $4^2 \cdot 4^b \cdot 4^{-3} = 4^{-6}$
   C. The missing value is -3 because $4^2 \cdot 4^b \cdot 4^{-3} = 4^{(2+b-3)}$
   D. The missing value is -125 because $4^2 \cdot 4^b \cdot 4^{-3} = 5^{(2+b+(-125))}$

4. **N-RN.1.2**
   The following expressions shows a simplification of a radical with a missing index.

   $$\sqrt{25 \cdot x^4 \cdot y^6} = 5 \cdot x^2 \cdot y^3$$

   What is the index for this expression?

   A. 2
   B. 4
   C. 5
   D. 6

5. **N-RN.2.3**
   Which statement is *not* always true?

   A. The product of two irrational numbers is irrational.
   B. The product of two rational numbers is rational.
   C. The sum of two rational numbers is rational.
   D. The sum of a rational number and an irrational number is irrational

Name: _____ Date: _____

Algebra 1: Week 1 FSA Countdown Period: _____

Day 2

1. **A-CED.1.3**

   A high school drama club is putting on their annual theater production. There is a maximum of 800 tickets for the show. The costs of the tickets are $6 before the day of the show and $9 on the day of the show. To meet the expenses of the show, the club must sell at least $5,000 worth of tickets. Write a system of inequalities that represent this situation.

2. **A-REI.1.1**

   When solving the equation $4(3x^2 + 2) - 9 = 8x^2 + 7$, Emily wrote $4(3x^2 + 2) = 8x^2 + 16$ as her first step. Which property justifies Emily's first step?

   A. Addition property of equality
   B. Commutative property of addition
   C. Multiplication property of equality
   D. Distributive property of multiplication over addition

3. **N-RN.1.1**

   Nicole simplifies $\frac{2^a \cdot 2^5}{2^b}$ to $2^{(a-b+5)}$. Which two properties of exponents did she use while simplifying the expression?

   A. Negative Exponent Property and Product of Powers Property
   B. Quotient of Powers Property and Product of Powers Property
   C. Quotient of Powers Property and Power of a Product Property
   D. Negative Exponent Property and Power of a Product Property

4. **N-RN.1.2**

   Select all the values that are equivalent to $\left(\left(b^{-2} + \frac{1}{b}\right)^1\right)^b$ when $b = \frac{3}{4}$

   A. $\left(\frac{5}{3}\right)^2$

   B. $\sqrt[4]{\left(\frac{28}{9}\right)^3}$

   C. $\left(\frac{5}{3}\right)^{\frac{3}{2}}$

   D. $\frac{\sqrt{125}}{\sqrt{27}}$

5. **N-RN.2.3**

   The rectangle shown below has a length of 6 feet.

   

   6 feet

   The value of the area of the rectangle, in square feet, is an irrational number. Therefore, the number that represents the width of the rectangle must be

   A. A whole number
   B. A rational number
   C. An irrational number
   D. A non-real complex number.

Name: _____ Date: _____

Algebra 1: Week 1 FSA Countdown Period: _____

Day 3

1. **A-CED.1.3**
   A high school drama club is putting on their annual theater production. There is a maximum of 800 tickets for the show. The costs of the tickets are $6 before the day of the show and $9 on the day of the show. To meet the expenses of the show, the club must sell at least $5,000 worth of tickets. The club sells 440 tickets before the day of the show. Is it possible to sell enough additional tickets on the day of the show to at least meet the expenses of the show? Justify your answer.

2. **A-REI.1.1**
   Which property of equality can be used to justify this step?

$$\begin{array}{rcl} 15 - 10x = & 6x \\ \underline{\quad + 10x \quad + 10x} & \\ 15 \qquad = & 16x \end{array}$$

   A. Substitution Property of Equality
   B. Summation Property of Equality
   C. Addition Property of Equality
   D. Subtraction Property of Equality

3. **N-RN.1.1**
   Find the value of a given $5^a = \sqrt[3]{5^2}$.

4. **N-RN.1.2**
   Select an expression that is equivalent to $\sqrt[9]{3^6}$.

   A. $3^{\frac{2}{3}}$

   B. $3^{\frac{3}{2}}$

   C. 3^3

   D. 3^{15}

5. **N-RN.2.3**

   Given: $L = \sqrt{2}$
   $M = 3\sqrt{3}$
   $N = \sqrt{16}$
   $P = \sqrt{9}$

   Which expression results in a rational number?
   A. L + M
   B. M + N
   C. N + P
   D. P + L

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Algebra 1: Week 1 FSA Countdown Period: _____

Day 4

1. **A-CED.1.3**
   Rashawn recently spent $100 to open a store selling tee-shirts. At his business, he purchases plain tee-shirts for $11 each, prints graphics on them, and then sells them for $26 each. What is the minimum number of tee-shirts that Rashawn would need to sell in order to make a profit (total income minus total expenses) of at least $400?
   A. 26
   B. 27
   C. 33
   D. 34

2. **A-REI.1.1**
   Given $-\frac{1}{3}x - \frac{2}{3} \geq 7x + 3$, which property is used below?

   $$3\left(-\frac{1}{3}x - \frac{2}{3}\right) \geq 3(7x + 3)$$

   A. Distributive Property
   B. Multiplication Property of Inequality
   C. Subtraction Property of Inequality
   D. Associative Property of Multiplication

3. **N-RN.1.1**
   What is the value of the expression $-2\sqrt[3]{a} + b^2$ when $a = 64$ and $b = -5$?

4. **N-RN.1.2**
   Select an expression that is equivalent to $\sqrt[4]{x^{\frac{2}{3}}}$.
   A. $x^{\frac{1}{4}}$
   B. $x^{\frac{9}{4}}$
   C. $x^{\frac{1}{6}}$
   D. $x^{\frac{8}{3}}$

5. **N-RN.2.3**
   Let *a* and *b* be rational numbers and let *c* be an irrational number. Select the appropriate cell in the table to show whether each value is always rational, never rational, or sometimes rational.

	$a + b$	$a - b$	c^2
Always Rational			
Never Rational			
Sometimes Rational			

Name: _____ Date: _____

Algebra 1: Week 1 FSA Countdown Period: _____

Day 5

1. **A-CED.1.3**
   An animal shelter spends $2.35 per day to care for each cat and $5.50 per day to care for each dog. Pat noticed that the shelter spent $89.50 caring for cats and dogs on Wednesday. Pat said that there might have been 8 cats and 14 dogs at the shelter on Wednesday. Are Pat's numbers possible? Use an equation to justify your answer.

2. **A-REI.1.1**
   When Aaliyah picks any number between 1 and 20, doubles it, adds 6, divides by 2 and subtracts 3, she always gets the number she started with. Evaluate and use algebraic evidence to support your conclusion.

3. **N-RN.1.1**
   Use properties of exponents to rewrite $\sqrt{\frac{xy^2}{(x^3z)^{\frac{1}{2}}}}$ with only positive, rational exponents.

4. **N-RN.1.2**
   Select an expression that is equivalent to $8^{\frac{1}{3}}\left(\sqrt{8^2}+8^2\right)$.
   A. $\sqrt{8^9}+8^{\frac{3}{7}}$
   B. $\sqrt[3]{8^4}+8^{\frac{7}{3}}$
   C. $\sqrt[7]{8^3}+8^{\frac{3}{2}}$
   D. $\sqrt[9]{8^2}+8^{\frac{7}{3}}$

5. **N-RN.2.3**
   Let *a* and *b* be rational numbers and let *c* be an irrational number. Consider a quadratic equation with integer coefficients and two distinct zeros. If one zero is irrational, which statement is true about the other zero?
   A. The other zero must be rational.
   B. The other zero must be irrational.
   C. The other zero can be either rational or irrational.
   D. The other zero must be non-real.

Name: _____ Date: _____

Algebra 1 Math: Week 2 FSA Countdown Period: _____

Day 1

1. **A-REI.3.5**

   What is the first step in solving the system shown using the elimination method?

   $\begin{cases} 3x - 12y = 5 \\ 3y - x = 9 \end{cases}$

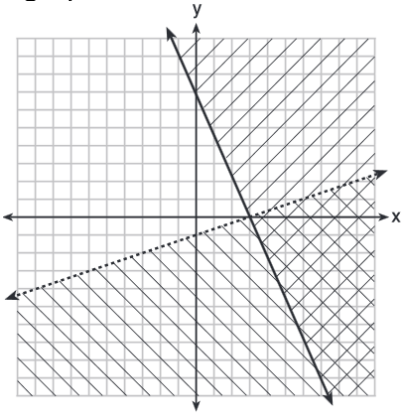
   A. Multiply each term in $3y - x = 9$ by 12.
   B. Multiply each term in $3y - x = 9$ by -12.
   C. Rewrite the equations so like variable terms are in the same order.
   D. Add the corresponding sides of each equation.

2. **A-REI.3.6**

A local business was looking to hire a landscaper to work on their property. They narrowed their choices to two companies. Flourish Landscaping Company charges a flat rate of $120 per hour. Green Thumb Landscapers charges $70 per hour plus a $1600 equipment fee. Write a system of equations representing how much each company charges. Determines and state the number of hours that must be worked for the cost of each company to be the same.

3. **A-REI.4.12**

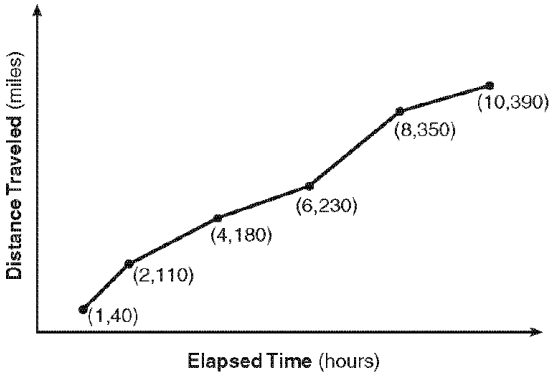
   Select all points from the list below that lie in the solution set of the system of inequalities graphed below?



   A. (7, 0)
   B. (3, 0)
   C. (0, 7)
   D. (-3, -5)
   E. (9, -3)
   F. (0, -1)

4. **F-IF.2.6**

   The Jamison family kept a log of the distance they traveled during a trip, as represented by the graph below.



   During which interval was their average speed the greatest?

   A. The first hour to the second hour
   B. The second hour to the fourth hour
   C. The sixth hour to the eighth hour
   D. The eighth hour to the tenth hour

5. **S-ID.3.7**

   The equation $y = -9.49x + 509.60$ gives the price y of a particular model of television x months after the television first became available. What is the real-world meaning of the y-intercept?

   A. The original price of the television was about $9.49.
   B. The price of the television decreases by about $9.49 each month.
   C. The price of the television increases by about $509.60 each month.
   D. The original price of the television was about $509.60.

Name: _____ Date: _____

Algebra 1 Math: Week 2 FSA Countdown Period: _____

Day 2

1. **A-REI.3.5**
   Which system of equations has the same solution as the system below?

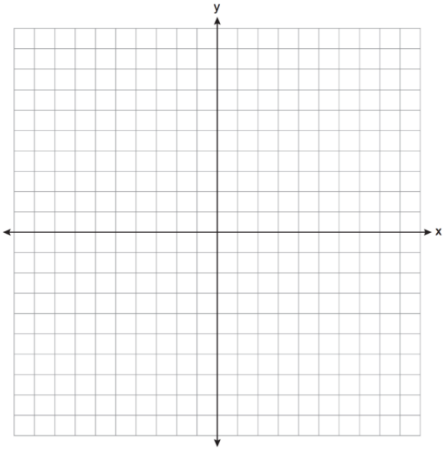
$$\begin{cases} 2x + 2y = 16 \\ 3x - y = 4 \end{cases}$$

   A. $\begin{cases} 2x + 2y = 16 \\ 6x - 2y = 4 \end{cases}$
   B. $\begin{cases} 2x + 2y = 16 \\ 6x - 2y = 8 \end{cases}$
   C. $\begin{cases} x + y = 16 \\ 3x - y = 4 \end{cases}$
   D. $\begin{cases} 6x + 6y = 48 \\ 6x + 2y = 8 \end{cases}$

2. **A-REI.3.6**
   Luis spent $55 buying songs and movies at an online store that charges $1.25 for each song and $2.75 for each movie. He purchased a total of 26 songs and movies combined. Determine how many songs *and* how many movies Luis purchased, using either an algebraic or graphical approach.

3. **A-REI.4.12**
   On the set of axes below, solve the following system of inequalities graphically.

$$\begin{cases} y > -x + 3 \\ 2y + 6 \leq x \end{cases}$$

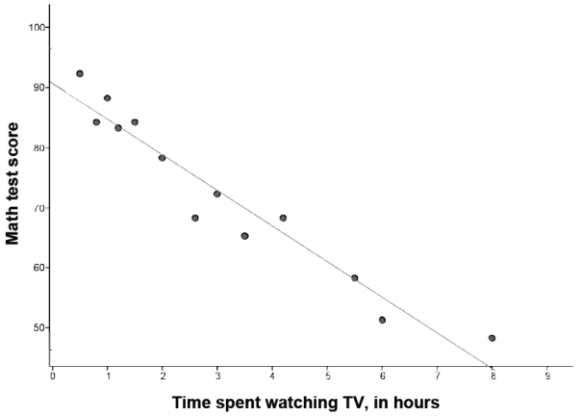


4. **F-IF.2.6**
   The table below shows the average diameter of a pupil in a person's eye as he or she grows older. What is the average rate of change, in millimeters per year, of a person's pupil diameter from age 20 to age 80?

Age (years)	Average Pupil Diameter (mm)
20	4.7
30	4.3
40	3.9
50	3.5
60	3.1
70	2.7
80	2.3

   A. 2.4
   B. 0.04
   C. -2.4
   D. -0.04

5. **S-ID.3.7**
   The number of hours spent watching TV the weekend before a math test and the test results for thirteen students in Mr. Marshall's class are plotted below and a line of best fit is drawn.



   If the equation of the line is $y = -5.9x + 91.9$, which statement is *false*?
   A. The slope of the line indicates that the test score and time spent watching TV are negatively correlated.
   B. The linear model predicts an approximate 6-point drop in test score for one hour spent watching TV.
   C. The y-intercept of the line indicates that a student who spends no time watching TV will get the highest test score.
   D. The linear model predicts an approximate test score of 92 if no time is spent watching TV.

Name: _____ Date: _____

Algebra 1 Math: Week 2 FSA Countdown Period: _____

Day 3

1. **A-REI.3.5**
   Which system of equations **cannot** be directly solved by applying the elimination method?
   A. $\begin{cases} 12x - 11y = -4 \\ -6x - 11y = 7 \end{cases}$
   B. $\begin{cases} x - 11y = -6 \\ x + 12y = -7 \end{cases}$
   C. $\begin{cases} 7x + 11y = 12 \\ -6x - 4y = -21 \end{cases}$
   D. $\begin{cases} x + 11y = 7 \\ 11y - 12x = 4 \end{cases}$

2. **A-REI.3.6**
   Guy and Jim work at a furniture store. Guy is paid $185 per week plus 3% of his total sales in dollars, x, which can be represented by $g(x) = 185 + 0.03x$. Jim is paid $275 per week plus 2.5% of his total sales in dollars, x, which can be represented by $f(x) = 275 + 0.025x$. Determine the value of x, in dollars, that will make their weekly pay the same.

3. **A-REI.4.12**
   Larry believes that (4, -1) is a solution to the system of inequalities $\begin{cases} y > -x + 3 \\ 2y + 6 \leq x \end{cases}$. Is he correct? Explain your reasoning.

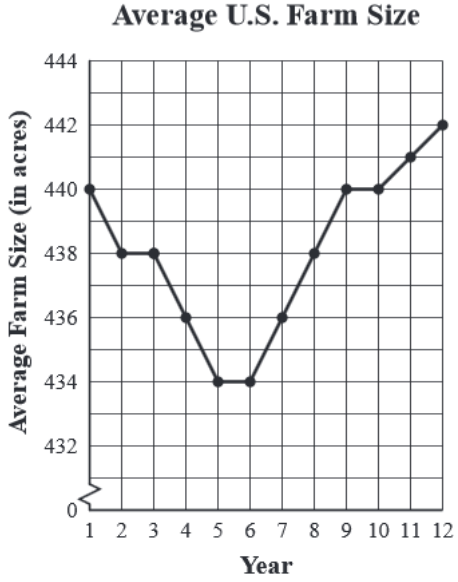
4. **F-IF.2.6**
   A scientist measures the water temperature in the Gulf at Gulfport on the fifteenth of each month. Her data is shown in the table.

Gulf Water Temperature, Gulfport
(data collected on the fifteenth of the month)

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.
Water Temperature (°F)	63.9	64.4	66.8	73.1	78.1	82.4	85.2	86.7	84.5

What is the average rate of change between March 15 and June 15?
A. 2.6°F per month
B. 3.9°F per month
C. 5.2°F per month
D. 7.8°F per month

5. **S-ID.3.7**
   The line graph below displays the average U.S. farm size, in acres, during a 12-year period. During which years did the average U.S. farm size decrease at a constant rate?



A. Years 1-3
B. Years 3-5
C. Years 5-6
D. Years 6-9

Name: _____ Date: _____

Algebra 1 Math: Week 2 FSA Countdown Period: _____

Day 4

1. **A-REI.3.5**

   Pilar says that the two linear systems below have the same solution. Is she correct? Explain.

   $\begin{cases} 3x + 2y = 2 \\ 5x + 4y = 6 \end{cases}$ and $\begin{cases} 3x + 2y = 2 \\ 11x + 8y = 10 \end{cases}$

2. **A-REI.3.6**

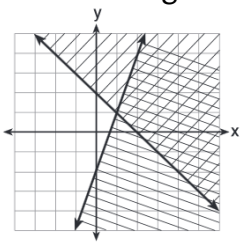
   A restaurant serves a vegetarian and a chicken lunch special each day. Each vegetarian special is the same price. Each chicken special is the same price. However the price of the vegetarian special is different from the price of the chicken special.

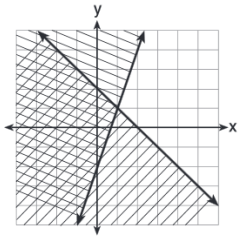
   - On Thursday, the restaurant collected $467 selling 21 vegetarian specials and 40 chicken specials.
   - On Friday, the restaurant collected $484 selling 28 vegetarian specials and 36 chicken specials.

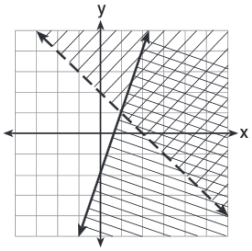
   What is the cost of each lunch special?

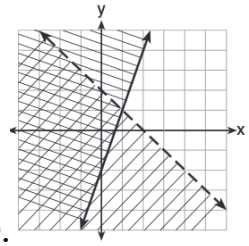
3. **A-REI.4.12**

   Given: $\begin{cases} y + x > 2 \\ y \leq 3x - 2 \end{cases}$ Which graph shows the solution of the given set of inequalities?

   A. 

   C. 

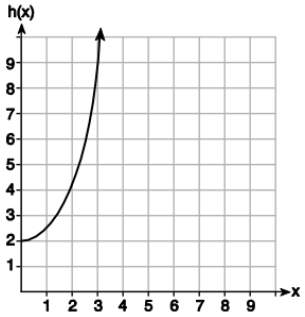
   B. 

   D. 

4. **F-IF.2.6**

   $g(x) = x^2 - 2x$

x	f(x)
0	1
1	2
2	5
3	7



   The correct list of functions ordered from greatest to least by average rate of change over the interval $0 \leq x \leq 3$ is

   A. $f(x), g(x), h(x)$
   B. $h(x), g(x), f(x)$
   C. $g(x), f(x), h(x)$
   D. $h(x), f(x), g(x)$

5. **S-ID.3.7**

   Ben researched the population of his town for each of the last ten years. He created a scatterplot of the data and noticed that the population increased by about the same amount each year. Ben will determine the equation of the line of best fit for his data. Which of the following statements about the equation of the line of best fit is true?

   A. The slope is zero.
   B. The slope is positive.
   C. The slope is negative.
   D. The slope is undefined.

Name: _____ Date: _____

Algebra 1 Math: Week 2 FSA Countdown Period: _____

Day 5

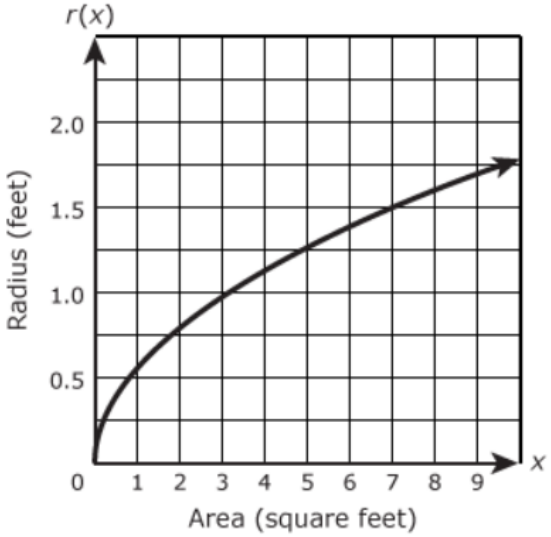
1. **A-REI.3.5**
   Examine the two systems shown. What was done to the leftmost system to create the system to the right? Do the systems have the same solution?

$$\begin{cases} 12x + 10y = 2 \\ -x + 4y = 5 \end{cases} \rightarrow \begin{cases} 12x + 10y = 2 \\ -12x + 48y = -60 \end{cases}$$

2. **A-REI.3.6**
   In a basketball game, Marlene made 16 field goals. Each of the field goals was worth either 2 points or 3 points, and Marlene scored a total of 39 points from field goals. Let x represent the number of two-point field goals and y to model the situation. How many three-point field goals did Marlene make in the game?

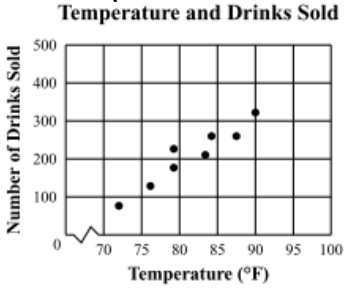
3. **A-REI.4.12**
   Which description fits the graph of $x > 4$?
   A. A vertical solid line, shaded to the right of the line
   B. A horizontal dashed line, shaded above the line
   C. A horizontal solid line, shaded above the line
   D. A vertical dashed line, shaded to the right of the line

4. **F-IF.2.6**
   The function $r(x)$ represents the radius of a circle for a given area x. A graph of the function is shown in the figure. According to the graph what is the average rate of change in the radius of the circle as the area increases from 3 square feet to 7 square feet?



   A. 0.125 foot per square foot
   B. 0.25 foot per square foot
   C. 0.5 foot per square foot
   D. 8 feet per square foot

5. **S-ID.3.7**
   The scatterplot below shows the relationship between the outside temperature at noon, in degrees Fahrenheit, and the number of drinks sold in a park. Based on the line of best fit for the scatterplot, what number of drinks is expected to be sold in the park when the outside temperature at noon is 95°F?



   A. 250
   B. 325
   C. 385
   D. 500

Name: _____ Date: _____

Algebra 1 Math: Week 3 FSA Countdown Period: _____

Day 1

1. **A-CED.1.4**
   Solve the following equation for x, in terms of *a* and *b.*

   $ax = 15 + bx$

2. **A-REI.2.3**
   Which ordered pair is *not* in the solution set of $y > -\frac{1}{2}x + 5$ and $y \leq 3x - 2$?
   A. $(5, 3)$
   B. $(4, 3)$
   C. $(3, 4)$
   D. $(4, 4)$

3. **F-BF.1.1**
   Caitlin has a movie rental card worth $175. After she rents the first movie, the card's value is $172.25. After she rents the second movie, its value is $169.50. After she rents the third movie, the card is worth $166.75. Assuming the pattern continues, write an equation to define *A(n)*, the amount of money on the rental card after *n* rentals.

4. **F-IF.1.3**
   Find the first five terms of the recursive sequence defined by the function below.
   $f(n) = 2f(n-1) + 3n$, where $f(1) = -2$

5. **F-LE.1.2**
   The third term in an arithmetic sequence is 10 and the fifth term is 26. If the first term is a_1, which is an equation for the *n*th term of this sequence?
   A. $a_n = 8n + 10$
   B. $a_n = 8n - 14$
   C. $a_n = 16n + 10$
   D. $a_n = 16n - 38$

Name: _____ Date: _____

Algebra 1 Math: Week 3 FSA Countdown Period: _____

Day 2

1. **A-CED.1.4**
   Solve $q = \frac{r}{2}(s + t)$ for t.
   A. $t = \frac{qr}{2} - s$
   B. $t = \frac{2q-s}{r}$
   C. $t = \frac{2q}{r} - s$
   D. $t = \frac{q}{2r} - s$

2. **A-REI.2.3**
   Which value of *x* satisfies the equation $\frac{7}{3}\left(x + \frac{9}{28}\right) = 20$?
   A. 8.25
   B. 8.89
   C. 19.25
   D. 44.92

3. **F-BF.1.1**
   Caitlin has a movie rental card worth $175. After she rents the first movie, the card's value is $172.25. After she rents the second movie, its value is $169.50. After she rents the third movie, the card is worth $166.75. Caitlin rents a movie every Friday night. How many weeks in a row can she afford to rent a movie, using her rental card only? Explain how you arrived at your answer.

4. **F-IF.1.3**
   If $f(1) = 3$ and $f(n) = -2f(n-1) + 1$, then $f(5) =$
   A. -5
   B. 11
   C. 21
   D. 43

5. **F-LE.1.2**
   The table below represents the function F.

x	3	4	6	7	8
F(x)	9	17	65	129	257

   The equation that represents this function is
   A. $F(x) = 3^x$
   B. $F(x) = 3x$
   C. $F(x) = 2^x + 1$
   D. $F(x) = 2x + 3$

Name: _____ Date: _____

Algebra 1 Math: Week 3 FSA Countdown Period: _____

Day 3

1. **A-CED.1.4**
   The volume of a cone can be calculated using the formula $V = \frac{1}{3}\pi r^2 h$. Which expression can be used to represent the height, *h*?
   A. $\frac{3V^2}{\pi r}$
   B. $\frac{3V}{\pi r^2}$
   C. $\frac{V}{3\pi r^2}$
   D. $\frac{\sqrt{V}}{3\pi r}$

2. **A-REI.2.3**
   Given $2x + ax - 7 > -12$, determine the largest integer value of *a* when $x = -1$.

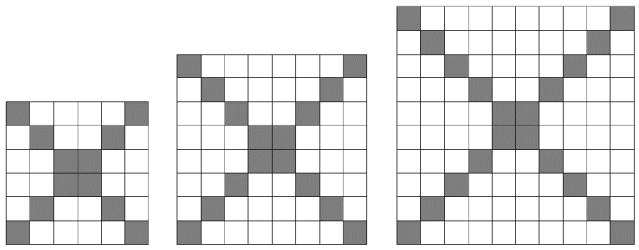
3. **F-BF.1.1**
   Tyona is performing a biology experiment in which she is studying how the number of bacteria in a dish changes over time. The initial number of bacteria in the dish was 1150, and after several hours of monitoring, Tyona was able to determine that the number of bacteria was doubling at the end of each hour.

   Write a function, b(t), that Tyona can use to determine the number of bacteria in the dish after t hours.

4. **F-IF.1.3**
   A sunflower is 3 inches tall at week 0 and grows 2 inches each week. Which function(s) shown below can be used to determine the height, *f(n)*, of the sunflower in *n* weeks?
   I. $f(n) = 2n + 3$
   II. $f(n) = 2n + 3(n - 1)$
   III. $f(n) = f(n - 1) + 2$ where $f(0) = 3$

   A. I and II
   B. II, only
   C. III, only
   D. I and III

5. **F-LE.1.2**
   The diagrams below represent the first three terms of a sequence.



   Assuming the pattern continues, which formula determines a_n, the number of shaded squares in the *n*th term?
   A. $a_n = 4n + 12$
   B. $a_n = 4n + 8$
   C. $a_n = 4n + 4$
   D. $a_n = 4n + 2$

Name: _____ Date: _____

Algebra 1 Math: Week 3 FSA Countdown Period: _____

Day 4

1. **A-CED.1.4**
   The formula for the area of a trapezoid is $A = \frac{1}{2}h(b_1 + b_2)$. Express b_1 in terms of A, h, and b_2.

2. **A-REI.2.3**
   What is the value of x in the equation $\frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$?
   A. 4
   B. 6
   C. 8
   D. 11

3. **F-BF.1.1**
   Rhonda deposited $3000 in an account in the Merrick National Bank, earning 4.2% interest, compounded annually. She made no deposits or withdrawls. Write an equation that can be used to find *B*, her account balance after *t* years.

4. **F-IF.1.3**
   Consider a sequence whose first five terms are: 6, 12, 24, 48, 96. Select the function (with domain all integers $n \geq 1$) that can be used to define and continue this sequence.
   A. $f(n) = 6n$
   B. $f(n) = 6(n-1)$
   C. $f(n) = 6n^2$
   D. $f(n) = 6(2)^{n-1}$

5. **F-LE.1.2**
   Two terms from a sequence are shown in the table below. Which formula does *not* generate these terms?

n	a_n
1	2
2	4

   A. $a_n = 2n$
   B. $a_n = 2(n-1) + 2$
   C. $a_n = 2^n$
   D. $a_n = 2^{n-1} + 2$

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Algebra 1 Math: Week 3 FSA Countdown Period: _____

Day 5

1. **A-CED.1.4**
   The formula shown can be used to find A, the amount of money Raul has in his savings account. Raul wants to find r, the rate of interest his money earns. Which equation is correctly solved for *r*?

   $$A = P + Prt$$

   A. $r = APt$

   B. $r = A - 2Pt$

   C. $r = \frac{A}{2Pt}$

   D. $r = \frac{A-P}{Pt}$

2. **A-REI.2.3**
   Solve the inequality below to determine and state the state the smallest possible value for *x* in the solution set.

   $$3(x + 3) \leq 5x - 3$$

3. **F-BF.1.1**
   Tom lives in a town 360 miles directly north of New York City, and one Saturday, he takes the train from his town to the city. The train travels at a constant speed, and after 2.5 hours, he sees a sign that states, "New York City: 210 miles." Use either an equation or a graph to determine how many hours it takes the train to get to New York City.

4. **F-IF.1.3**
   Write a recursive rule for the sequence $-5, 10, -20, 40, -80, \ldots$

   A. $a_1 = 2, a_n = -5(-2)^n$

   B. $a_1 = -5, a_n = 2(a_{n-1})^{-1}$

   C. $a_1 = -2, a_n = -5a_{n-1}$

   D. $a_1 = -5, a_n = -2a_{n-1}$

5. **F-LE.1.2**
   Jorge bought a mechanical pencil for $8. A lead and eraser refill pack costs $2. Write a linear function to describe the cost of using the pencil as a function of the number of refill packs.

   A. $C(r) = 8r - 2$

   B. $C(r) = 2r + 8$

   C. $C(r) = 2r$

   D. $C(r) = 8r + 2$

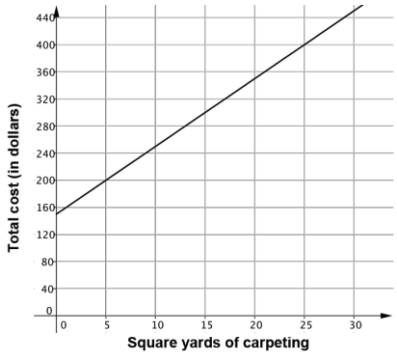
Name: _____ Date: _____

Algebra 1 Math: Week 4 FSA Countdown Period: _____

Day 1

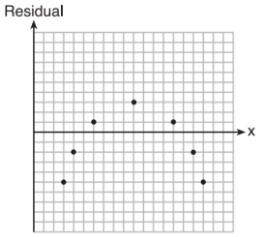
1. **F-LE.1.1**
   Tom deposited $100 into a bank, and the amount in his bank account increases by 5% each year. Christine deposited $100 into a different bank, and the amount in her bank account increases by $5 each year. Which statement is true about the amounts in Tom's and Christine's bank accounts?
   A. The amount in Tom's bank account can be modeled by an exponential function and the amount in Christine's bank account can be modeled by a linear function.
   B. The amount in Tom's bank account can be modeled by a linear function and the amount in Christine's bank account can be modeled by an exponential function.
   C. The amounts in both bank accounts can both be modeled by exponential functions.
   D. The amounts in both bank accounts can both be modeled by linear functions.

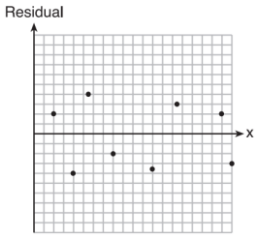
2. **F-LE.2.5**
   Eric is hiring a company to install carpeting in his house. The company charges a one-time installation fee plus a certain amount per square yard of carpeting. The graph below shows the relationship between the number of square yards of carpeting and the total cost, in dollars.



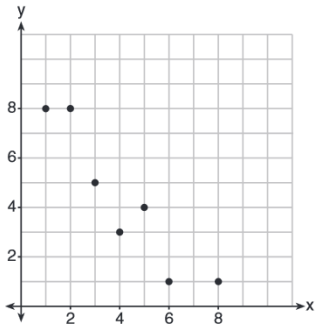
   The quantity that represents the cost per square yard of carpeting is the

   A. Slope of the graph
   B. Y-intercept of the graph
   C. Domain of the function
   D. Range of the function

3. **S-ID.2.6**
   Which statistic would indicate that a linear function would *not* be a good fit to model a data set?
   A. $r = -0.93$
   B. $r = 1$
   C. 

   D. 

4. **S-ID.3.8**
   What is the correlation coefficient of the linear fit of the data shown below, to the *nearest hundredth*?



   A. 1.00
   B. 0.93
   C. -0.93
   D. -1.00

5. **S-ID.3.9**
   Which of the following values for *r* suggests that one variable causes another?
   A. -0.7
   B. 0
   C. 0.9
   D. None of the above

Name: _____ Date: _____

Algebra 1 Math: Week 4 FSA Countdown Period: _____

Day 2

1. **F-LE.1.1**

The table below shows the average yearly balance in a savings account where interest is compounded annually. No money is deposited or withdrawn after the initial amount is deposited.

Year	Balance, $
0	$380.00
10	$562.49
20	$832.63
30	$1232.49
40	$1824.39
50	$2700.54

Which type of function best models the given data?

A. Linear function with a negative rate of change
B. Linear function with a positive rate of change
C. Exponential decay function
D. Exponential growth function

2. **F-LE.2.5**

A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function $y = 40 + 90x$. Which statement represents the meaning of each part of the function?

A. y is the total cost, x is the number of months of service, $90 is the installation fee, and $40 is the service charge per month.
B. y is the total cost, x is the number of months of service, $40 is the installation fee, and $90 is the service charge per month.
C. x is the total cost, y is the number of months of service, $40 is the installation fee, and $90 is the service charge per month.
D. x is the total cost, y is the number of months of service, $90 is the installation fee, and $40 is the service charge per month.

3. **S-ID.2.6**

Emma recently purchase a new car. She decided to keep track of how many gallons of gas she used on five of her business trips. The results are shown in the table below. Emma figured out that the regression equation for these data where miles driven is the independent variable was $y = 0.05x - 0.92$. What does the value 0.05 represent in this equation?

Miles Driven	Number of Gallons Used
150	7
200	10
400	19
600	29
1000	51

4. **S-ID.3.8**

Deany collects data for a market research company on the number of dollars men and women spend on video games per year as a function of their age. She then models the data using linear functions.

- The correlation coefficient for the function for men is 0.30.
- The correlation coefficient for the function for women is 0.15.

Which statement correctly describes the meaning of the correlation coefficients?

A. Men spend approximately twice as much as women on video games.
B. The function for men represents the amount they spend on video games better than the function for women.
C. Men spend the most on video games at age 30, and women spend the most on video games at age 15.
D. Men increase the amount they spend on video games by 30% each year, and women increase the amount they spend by 15%.

5. **S-ID.3.9**

The table shows the sizes and prices of some homes listed for sale in San Jose, California in 2010. The equation for the least squares line for the data is $y = 0.367x + 0.163$ and $r \approx 0.96$. Discuss correlation and causation for the data set.

Home Size (thousands of ft²)	1.52	2.50	3.50	4.50	5.46	6.42	7.50	8.20	9.88	10.5
Price (millions of $)	0.53	0.90	1.56	1.85	2.10	3.40	2.70	3.00	3.58	4.00

A. There is a strong positive correlation between a home's size and its price. There is a likely cause-and-effect relationship because it is likely that people will pay more money for a larger home.
B. There is a weak positive correlation between a home's size and its price. There is a likely cause-and-effect relationship because it is likely that people will pay more money for a larger home.
C. There is a strong positive correlation between a home's size and its price. There is not a likely cause-and-effect relationship because other factors, such as the number of bedrooms, also affect a home's price.
D. There is a weak positive correlation between a home's size and its price. There is not a likely cause-and-effect relationship because other factors, such as the number of bedrooms, also affect a home's price.

Name: _____ Date: _____

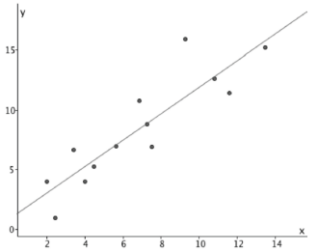
Algebra 1 Math: Week 4 FSA Countdown Period: _____

Day 3

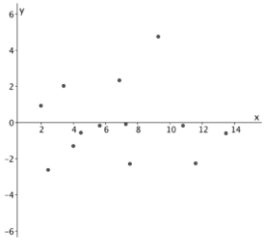
1. **F-LE.1.1**
   Which situation could be modeled by using a linear function?
   A. A bank account balance that grows at a rate of 5% per year, compounded annually
   B. A population of bacteria that doubles every 4.5 hours
   C. The cost of cell phone service that charges a base amount plus 20 cents per minute
   D. The concentration of medicine in a person's body that decays by a factor of one-third every hour

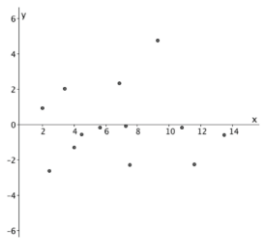
2. **F-LE.2.5**
   The breakdown of a sample of a chemical compound is represented by the function $p(t) = 300(0.5)^t$, where *p(t)* represents the number of milligrams of the substance and *t* represents the time, in years. In the function *p(t)*, explain what 0.5 and 300 represent.

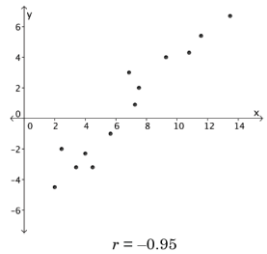
3. **S-ID.2.6**
   A scatter plot was constructed and a linear regression curve was drawn on the graph below.

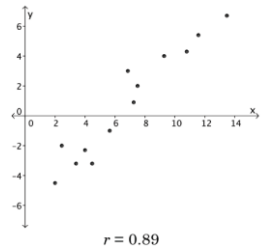


   Which residual plot and correlation coefficient best model the regression curve's fit to the data?

A. 

C. 

B. 

D. 

4. **S-ID.3.8**
   You find a line of fit for a set of data and calculate that the correlation coefficient for the model is –0.34. Which statement best describes the fit of the model to the data?
   A. The correlation coefficient suggests a strong positive correlation, so this model is a good fit for the data.
   B. The correlation coefficient suggests a weak positive correlation, so this model is a not a good fit for the data.
   C. The correlation coefficient suggests a weak negative correlation, so this model is a not a good fit for the data.
   D. The correlation coefficient suggests a strong negative correlation, so this model is a good fit for the data.

5. **S-ID.3.9**
   The table below shows the prices of a small popcorn and a small soda at eight different movie theaters.

Price of Small Popcorn	$4.50	$4.75	$5.00	$6.50	$4.50	$7.50	$5.00	$5.25
Price of Small Soda	$2.50	$3.00	$3.25	$4.00	$2.75	$3.50	$3.00	$3.50

   A. There is not enough information to determine whether there is a cause-and-effect relationship between the price of popcorn and the price of soda.
   B. There must be a cause-and-effect relationship between the price of popcorn and the price of soda because, if graphed, the data points would cluster closely around a line of best fit.
   C. There must be a cause-and-effect relationship between the price of popcorn and the price of soda because the price of soda is always less than the price of popcorn.
   D. There cannot be a cause-and-effect relationship between the price of popcorn and the price of soda because you cannot determine the price of one when given the price of the other.

Name: _____ Date: _____

Algebra 1 Math: Week 4 FSA Countdown Period: _____

Day 4

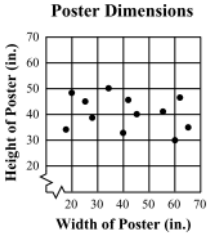
1. **F-LE.1.1**
The table below shows the number of sales at a local car dealership where *year* represents the number years after 2010.

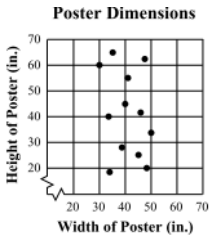
Year	0	1	2	3
Sales	5000	4000	3200	2560

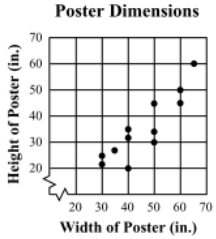
Which type of function best models the given data?
A. Linear function with a negative rate of change
B. Linear function with a positive rate of change
C. Exponential decay function
D. Exponential growth function

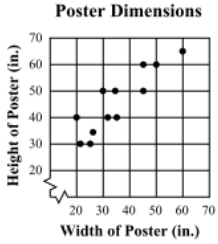
2. **F-LE.2.5**
A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture each radio. If the cost of manufacturing r radios is given by the function $c(r) = 5.25r + 125$, then the value 5.25 best represents
A. The start-up cost
B. The profit earned from the sale of one radio
C. The amount spent to manufacture each radio
D. The average number of radios manufactured

3. **S-ID.2.6**
Janice observed that the heights of the posters in her apartment are always greater than the widths. Which of the following scatterplots could represent the dimentions of the posters in Janice's apartment?

A.


C.


B.


D.


4. **S-ID.3.8**
The table shows the relationship between weight and lifespan for several dog breeds. John found the equation of the line of best fit to be $y = -0.04x + 13.62$. Which choice below shows the correct correlation coefficient with the correct interpretation of its value?

Breed	Typical Weight (pounds)	Typical Lifespan (years)
Yorkshire Terrier	5.5	15
Shih Tzu	12.5	13
Pug	16	13.5
Boston Terrier	20	13
Welsh Corgi (Pembroke)	26	13
Bulldog	45	7
Siberian Husky	47.5	12
Golden Retriever	65	12
German Shepherd Dog	72.5	11
Rottweiler	107.5	10
Great Dane	135	8.5

A. The value of r is about –0.71, which indicates a moderately negative correlation.
B. The value of r is about 0.71, which indicates a moderately positive correlation.
C. The value of r is about 0.49, which indicates a slightly negative correlation.
D. The value of r is about –0.71, which indicates that weight and lifespan are not correlated.

5. **S-ID.3.9**
Which pair of statements is true?
A. If two variables have a cause-and-effect relationship, then they are usually correlated. However, two variables can be correlated but not have a cause-and-effect relationship.
B. If two variables have a correlation, then they probably have a cause-and-effect relationship. However, two variables can have a cause-and-effect relationship and not be correlated.
C. If two variables have a correlation, then they must have a cause-and-effect relationship. Similarly, if two variables have a cause-and-effect relationship, then they must be correlated.
D. If two variables have a cause-and-effect relationship, then they cannot be correlated. Similarly, if two variables are correlated, they cannot have a cause-and-effect relationship.

Name: _____ Date: _____

Algebra 1 Math: Week 4 FSA Countdown Period: _____

Day 5

1. **F-LE.1.1**
   Which of the following can be represented by an exponential function?

A. Ben deposits $20 in a savings account. Then he deposits $2 each month for the next 6 months.

B. Leslie deposits $20 in a savings account. Then she makes a deposit each month for the next 6 months, putting in $2 more with each deposit.

C. Dan runs a mile in 9 minutes. Then he runs a mile each day for the next 4 days, reducing his time by 6 seconds each day.

D. Rick runs a mile in 8 minutes. Then he runs a mile each day for the next 4 days, reducing his time by 1.5% each day.

2. **F-LE.2.5**

An air conditioning repair service call costs $75 per hour plus a flat fee trip charge of $25. If the situation can be represented by the function $r(h) = 75h + 25$, what do the variables represent and which is the dependent variable?

A. The repair time h depends on the repair charges r in hours.

B. The repair charges h depends on the repair time r in hours.

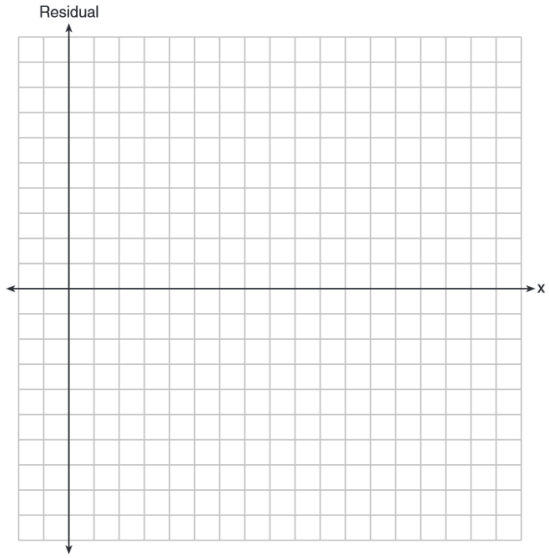
C. The repair charges r depends on the repair time h in hours.

D. The repair time r depends on the repair time h in hours.

3. **S-ID.2.6**

Assess the fit of the line using the residuals for a line of best fit (as provided in the table below). Justify your answer by creating and analyzing the graph of the residuals.

x	2	3	3	4	6	7	8	9	9	10
Residuals	2	1	-1	-2	-3	-2	-1	2	0	3



4. **S-ID.3.8**

There is a known relationship between forearm length (f) and body height (h). The table and accompanying scatter plot show arm lengths and heights from a randomly selected sample of people. Select the most appropriate correlation coefficient for the linear model below.

Forearm length (cm)	24	27	24	32	30
Body height (cm)	157	177	164	195	178

A. -0.94

B. 0.94

C. 3.86

D. 0.06

5. **S-ID.3.9**
   Which of the following can establish that one variable has an effect on another variable?

A. A correlation coefficient greater than 0.7

B. A controlled scientific experiment

C. A clear pattern in a scatter plot

D. A line of best fit

Name: _____ Date: _____

Algebra 1 Math: Week 5 FSA Countdown Period: _____

Day 1

1. **A-APR.1.1**
   Which operation between two polynomials will *not* always result in a polynomial?
   A. Addition
   B. Subtraction
   C. Multiplication
   D. Division

2. **A-REI.2.4**
   Terry solved the equation $x^2 + 10 = 5x$ using the quadratic formula and stated that it has no real solutions. Is Terry correct? Justify your answer.

3. **A-SSE.1.1**
   When the quadratic polynomial $5x + 2 - 4x^2$ is written in standard form, which statement is *false*?
   A. The degree of the polynomial is less than the number of terms.
   B. The constant term is less than the leading coefficient.
   C. The value of *a* is less than the value of *b*.
   D. The value of *c* is less than the value of *b*.

4. **A-SSE.1.2**
   Which expression is equivalent to $x^4 - 12x^2 + 36$?
   A. $(x^2 - 6)(x^2 - 6)$
   B. $(x^2 + 6)(x^2 + 6)$
   C. $(6 - x^2)(6 + x^2)$
   D. $(x^2 + 6)(x^2 - 6)$

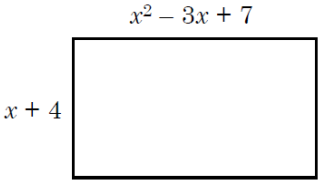
5. **A-SSE.2.3**
   The function $f(x) = x^2 - 5x - 6$, written correctly in factored form, and its zeros are
   A. $f(x) = (x - 2)(x + 3)$ with zeros of -2 and 3
   B. $f(x) = (x + 3)(x - 2)$ with zeros of -3 and 2
   C. $f(x) = (x - 6)(x + 1)$ with zeros of -6 and 1
   D. $f(x) = (x + 1)(x - 6)$ with zeros of -1 and 6

Name: _____ Date: _____

Algebra 1 Math: Week 5 FSA Countdown Period: _____

Day 2

1. **A-APR.1.1**
   A window in the shape of a rectangle, as shown below, has a width of $x + 4$ and a length of $x^2 - 3x + 7$. Express the area of the rectangle as a single polynomial, in simplest form.



2. **A-REI.2.4**
   If John solved the equation $x^2 - 10x + 8 = 0$ by completing the square, one of the steps in his process would be
   A. $(x - 5)^2 = -8$
   B. $(x - 5)^2 = 17$
   C. $(x + 4)^2 = 10x$
   D. $(x + 4)^2 = 10x + 16$

3. **A-SSE.1.1**
   It costs $74 per hour plus a $65 service fee to have a home theater system set up for you. Let *t* represent the number of hours. Which expression represents the total cost?
   A. 74t+65
   B. 65t+75
   C. 140t
   D. 74t

4. **A-SSE.1.2**
   Factor the expression $x^4 + 6x^2 - 7$ completely.

5. **A-SSE.2.3**
   Keith determines the zeros of the function *f(x)* to be -6 and 5. What could be Keith's function?
   A. $f(x) = (x + 5)(x + 6)$
   B. $f(x) = (x + 5)(x - 6)$
   C. $f(x) = (x - 5)(x + 6)$
   D. $f(x) = (x - 5)(x - 6)$

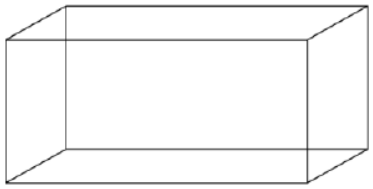
Name: _____ Date: _____

Algebra 1 Math: Week 5 FSA Countdown Period: _____

Day 3

1. **A-APR.1.1**
   A company produces *x* units of a product per month, where C(x) represents the total cost and R(x) represents the total revenue for the month. The functions are modeled by $C(x) = 300x + 250$ and $R(x) = -0.5x^2 + 800x - 100$. The profit is the difference between revenue and cost where $P(x) = R(x) - C(x)$. What is the total profit, P(x), for the month?
   A. $P(x) = -0.5x^2 + 500x - 150$
   B. $P(x) = -0.5x^2 + 500x - 350$
   C. $P(x) = -0.5x^2 - 500x + 350$
   D. $P(x) = -0.5x^2 + 500x + 350$

2. **A-REI.2.4**
   Paul purchased a new fish tank, represented by the diagram below. The height, *h*, of the tank is 3 feet, and the width, *w*, is 6 feet longer than the length, *l*. The volume of the tank ($V = lwh$) is 60 ft^3. Determine the exact length of the tank in simplest radical form.



3. **A-SSE.1.1**
   The art club at Lily's school has had 300 calendars printed to sell as a fundraiser. It costs the art club \$4 per calendar to have the calendars printed and the club sells them for \$10 per calendar. The art club's profit P(n) is given by the following function, where *n* represents the number of calendars sold.

$$P(n) = 10n - 1200$$

   What does the term "10n" represent? What are its units? Explain your reasoning.

4. **A-SSE.1.2**
   Teresa is simplifying an expression.
   Step 1: $\sqrt{4x^2}$
   Step 2:
   Step 3: $2x$

   What should Teresa add at step 2 to best complete the process?
   A. $\sqrt{(2x)^2}$
   B. $2\sqrt{2x^2}$
   C. $x\sqrt{4x}$
   D. $\sqrt{(2+2)(x+x)}$

5. **A-SSE.2.3**
   The expression $3280(1.0117)^x$ defines a function that models the future population of wolves in a park after x months. Find the yearly growth rate for the wolf population as a percent. Round to the nearest hundredth.

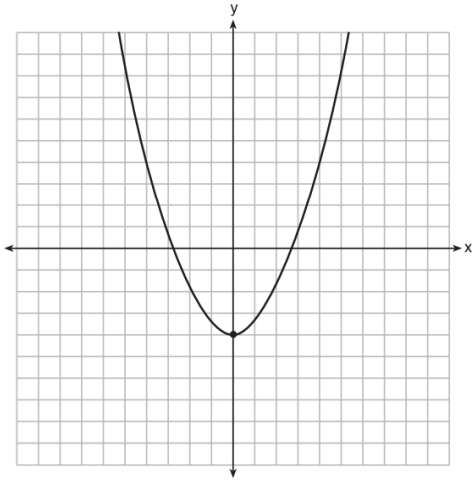
Name: _____ Date: _____

Algebra 1 Math: Week 5 FSA Countdown Period: _____

Day 4

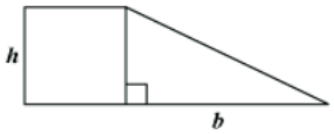
1. **A-APR.1.1**
   Write an equation that defines $m(x)$ as a trinomial where
   $$m(x) = (3x - 1)(3 - x) + 4x^2 + 19$$

2. **A-REI.2.4**
   Ryker is given the graph of the function $y = \frac{1}{2}x^2 - 4$. He wants to find the zeros of the function, but is unable to read them exactly from the graph. Find the zeros in simplest radical form.



3. **A-SSE.1.1**
   At the zoo, a child pays c dollars for a ticket and an adult pays g dollars. Explain in words the meaning of $g = 2c$.
   A. An adult ticket costs twice as much as a child ticket.
   B. An adult ticket costs half as much as a child ticket.
   C. Twice as many child tickets as adult tickets are sold.
   D. Half as many adults as children go to the zoo.

4. **A-SSE.1.2**
   The figure below is made up of a square with height, *h* units, and a right triangle with height, *h* units, and base length, *b* units. The area of this figure is 80 square units. Write an equation that solves for the height, *h*, in terms of *b*. Show all work necessary to justify your answer.



5. **A-SSE.2.3**
   Rewrite the function $f(x) = 2x^2 - 8x + 9$ in vertex form by completing the square. Enter your answers in the boxes below.

$f(x) =$ ☐ $(x -$ ☐ $)^2 +$ ☐

Therefore $f(x) = 2x^2 - 8x + 9$ has a minimum value of ☐.

Name: _____ Date: _____

Algebra 1 Math: Week 5 FSA Countdown Period: _____

Day 5

1. **A-APR.1.1**
   Determine all zeros for the function $f(x) = (x^2 + 2x - 8)(x - 6)$. Drag and drop **all** zeros of the function into the box.

   -48 -8 -6 -4 -2 0 2 4 6 8 48

   [ ]

2. **A-REI.2.4**
   In the equations listed, *a*, *b*, *c*, and *d* are real numbers. Which of the equations could have solutions that are nonreal? Select **all** that apply.
   A. $ax^2 = b$
   B. $ax^2 + bx = 0$
   C. $ax^2 + bx + c = 0$
   D. $(ax + b)(cx + d)$
   E. $a(bx + c)^2 = d$

3. **A-SSE.1.1**
   Elephant Population Estimates – Namibia
   Combined estimates for Etosha National Park and the Northwestern Population

   The elephant population in northwestern Namibia and the Etosha National Park can be predicted by the expression $2{,}649(1.045)^b$, where *b* is the number of years since 1995. What does the value 2,649 represent?
   A. The predicted increase in the number of elephants in the region each year
   B. The predicted number of elephants in the region in 1995
   C. The year when the elephant population is predicted to stop increasing
   D. The percentage the elephant population is predicted to increase each year

4. **A-SSE.1.2**
   A ball was thrown upward in the air. The height, in feet, of the ball above the ground *t* seconds after being thrown can be determined by the expression $-16t^2 + 40t + 3$. What is the meaning of 3 in the expression? Select the correct answer.
   A. The ball takes 3 seconds to reach its maximum height.
   B. The ball takes 3 seconds to reach the ground.
   C. The ball was thrown from a height of 3 feet.
   D. The ball reaches a maximum height of 3 feet.

5. **A-SSE.2.3**
   Fill in the missing portions of the function to rewrite $g(x) = 3x^2 - 33x - 180$ to reveal the zeros of the function. What are the zeros of $g(x)$? Enter your answers in the boxes.

   $g(x) = 3(x + $ [ ] $)(x - $ [ ] $)$

   Zeros: [ ] and [ ]

Name: _____ Date: _____

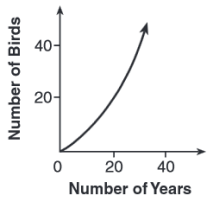
Algebra 1 Math: Week 6 FSA Countdown Period: _____

Day 1

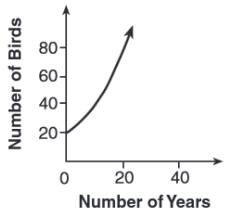
1. **F-LE.1.3**

A population that initially has 20 birds approximately doubles every 10 years. Which graph represents this population growth?

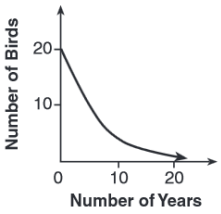
A.



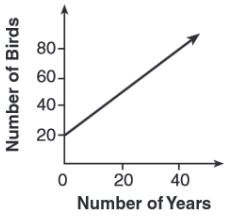
C.



B.



D.



2. **S-ID.1.1**

Determine which display each person most likely used to make the following conclusions.

Conclusions	Box Plot	Histogram
Ms. Rosario determines that 50% of her students scored above an 85 on their math test.		
Kam finds out that 20 of his Facebook® friends are between 13 and 18 years old.		
Bryce determines that 5 of her classmates spend 1 to 2 hours on homework every night.		
A company finds out that 25% of its employees earn less than $35,000 annually.		

3. **S-ID.1.2**

Isaiah collects data from two different companies, each with four employees. The results of the study, based on each worker's age and salary are listed in the tables below.

Company 1

Worker's Age in Years	Salary in Dollars
25	30,000
27	32,000
28	35,000
33	38,000

Company 2

Worker's Age in Years	Salary in Dollars
25	29,000
28	35,500
29	37,000
31	65,000

Which statement is true about these data?

A. The median salaries in both companies are greater than $37,000.
B. The mean salary in company 1 is greater than the mean salary in company 2.
C. The salary range in company 2 is greater than the salary range in company 1.
D. The mean age of workers at company 1 is greater than the mean age of workers at company 2.

4. **S-ID.1.3**

Which conclusion about T-shirt prices at Cool Clothes and Ben's Shirts is **best** supported by the data?

T-shirt Price Statistics for Two Stores

Store	Median	Mean	Interquartile Range
Cool Clothes	$13.99	$18.53	$8.24
Ben's Shirts	$14.99	$14.63	$4.60

A. Some high-priced T-shirts at Cool Clothes make the mean higher than the median.
B. The fact that the mean and median are very similar at Ben's Shirts shows that all of the shirts cost under $15.
C. Comparing the mean prices shows that most shirts are cheaper at Ben's Shirts than at Cool Clothes.
D. Comparing the interquartile ranges shows that T-shirts at Cool Clothes are about twice as expensive as T-shirts at Ben's Shirts.

5. **S-ID.2.5**

A random sample of 200 teenagers participated in a taste test. Each teenager sampled four choices of fruit drink (labeled "A", "B", "C", and "D"), and then were asked to pick a favorite. The table shows the results of this taste test.

	A	B	C	D	Total
Boys	45	25	30	20	120
Girls	25	10	30	15	80
Total	70	35	60	35	200

Based on the information provided, which of the given statements are true? Select **all** that apply.

A. 40% of the participants were girls.
B. 70% of the participants preferred "A".
C. $\frac{20}{120}$ of the boys preferred "D".
D. $\frac{10}{35}$ of the participants who preferred "B" were girls.
E. The proportion of the boys who preferred "C" is $\frac{30}{60}$

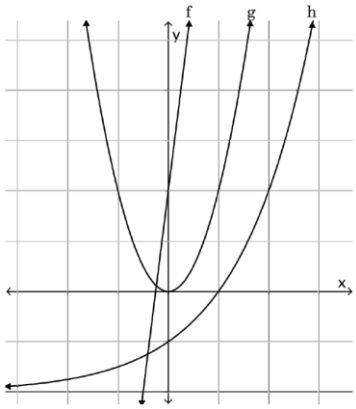
Name: _____ Date: _____

Algebra 1 Math: Week 6 FSA Countdown Period: _____

Day 2

1. F-LE.1.3

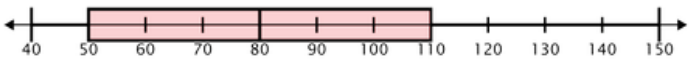
Three functions, $f(x) = 8x + 2$, $g(x) = 2x^2$, and $h(x) = 2^x - 2$ are graphed below on the same coordinate plane. Which statement regarding f(x), g(x), and h(x) is *true?*



A. $f(x) > g(x)$ for all $x > 0$
B. $g(x) > h(x)$ for all $x > 0$
C. $h(x)$ eventually exceeds $g(x)$ but not $f(x)$.
D. $h(x)$ eventually exceeds both $f(x)$ and $g(x)$.

2. S-ID.1.1

The following box plot shows the points scored by a basketball team for each game in a season. Based on the box plot shown, select the statement that correctly describes the team's performance over the season.



A. The average points scored per game by the team this season was 80.
B. The highest points scored by the team in a game this season was 110.
C. The team's score was 85 or less in fifty percent of the games this season.
D. The team's score was 80 or more in fifty percent of the games this season.

3. S-ID.1.2

Christopher looked at his quiz scores shown below for the first and second semester of his Algebra class.

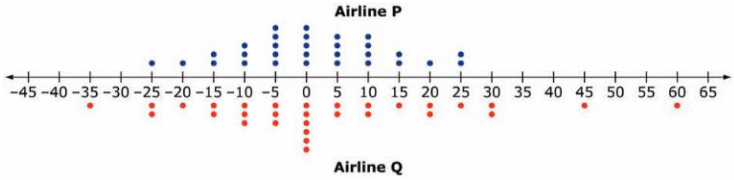
Semester 1: 78, 91, 88, 83, 94
Semester 2: 91, 96, 80, 77, 88, 85, 92

Which statement about Christopher's performance is correct?

A. The interquartile range for semester 1 is greater than the interquartile range for semester 2.
B. The median score for semester 1 is greater than the median score for semester 2.
C. The mean score for semester 2 is greater than the mean score for semester 1.
D. The third quartile for semester 2 is greater than the third quartile for semester 1

4. S-ID.1.3

The dot plots below compare the number of minutes 30 flights made by two airlines arrived before or after their scheduled arrival times.



- Negative numbers represent the minutes the flight arrived **before** its scheduled time.
- Positive numbers represent the minutes the flight arrived **after** its scheduled time.
- Zero indicates the flight arrived **at** its scheduled time.

Based on these data, from which airline will you choose to buy your ticket? Use the ideas of center and spread to justify your choice.

5. S-ID.2.5

Casey wants to determine what his classmates' favorite summer break activities are. What percent of Casey's classmates are boys who favor going to the beach in the summer? Round your answer to the nearest percent.

	Playing Video Games	Playing Sports	Going to the Beach	Going to the Mall	Total
Boys	22	10	32	17	81
Girls	8	12	29	16	65
Total	30	22	61	33	146

Name: _____ Date: _____

Algebra 1 Math: Week 6 FSA Countdown Period: _____

Day 3

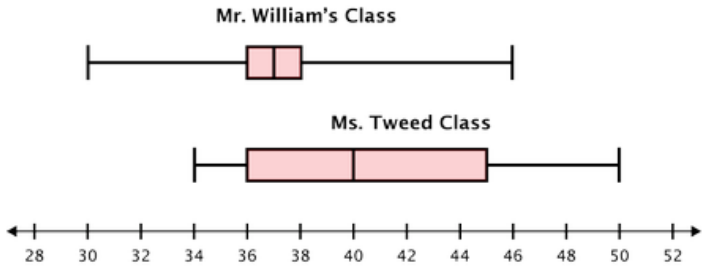
1. **F-LE.1.3**
Keenville and Westbrook each have 1500 residents. The population of Keenville increases by 3% every year. The population of Westbrook increases by 80 residents every year. How long will it take for the population of Keenville to exceed the population of Westbrook?
   A. 1.1 years
   B. 1.8 years
   C. 36.7 years
   D. 45 years

2. **S-ID.1.1**
Robin collected data on the number of hours she watched television on Sunday through Thursday nights for a period of 3 weeks. The data are shown in the table below.

	Sun	Mon	Tue	Wed	Thu
Week 1	4	3	3.5	2	2
Week 2	4.5	5	2.5	3	1.5
Week 3	4	3	1	1.5	2.5

Using an appropriate scale on the number line below, construct a box plot for the 15 values.

3. **S-ID.1.2**
Which statement is true based on the box plots shown?



A. The interquartile range of students who attended Mr. William's class is lower than the interquartile range of students who attended Ms. Tweed's class.
B. The median number of students who attended Mr. William's class is greater than the median number of students who attended Ms. Tweed's class.
C. The range of students who attended Mr. William's class is lower than the range of students who attended Ms. Tweed's class.
D. Less than 36 students attended both classes on 75% of the days.

4. **S-ID.1.3**
Paul surveyed his classmates to find out how many electronic gadgets each person has in their home. The following data set shows his results.

10, 11, 12, 5, 7, 8, 16, 10, 11, 11, 5, 8, 9, 11, 17

Select all the statements that describe the outliers in this data set.
   A. The value of the median stays the same if the outliers are excluded
   B. The value of the mean stays the same if the outliers are excluded
   C. The outliers are all the values that are about 5.5 more than the median
   D. The outliers are all the values that are about 6.5 less than the median

5. **S-ID.2.5**
A randomly selected group of 80 high school students were surveyed to see if Math or English was their favorite subject. What percent of the students surveyed are in 10th grade? Round your answer to the nearest percent.

	9th Grade	10th Grade	11th Grade	12th Grade	Total
Math	10	11	8	10	39
English	12	12	11	6	41
Total	22	23	19	16	80

   A. 14%
   B. 15%
   C. 29%
   D. 71%

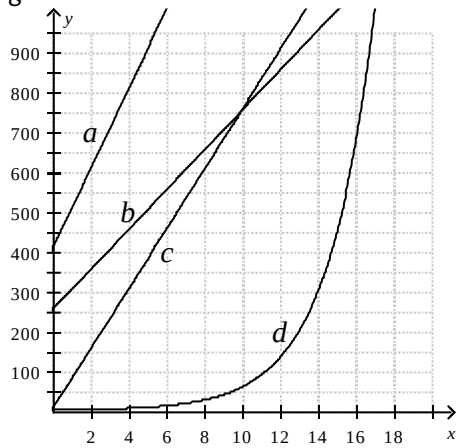
Name: _____ Date: _____

Algebra 1 Math: Week 6 FSA Countdown Period: _____

Day 4

1. F-LE.1.3

Functions a, b, and c are linear functions and d is an exponential function. Does the graph show which function will have larger y values as x gets larger and larger?



A. No, it cannot be determined from a graph which function has larger function values as x gets larger and larger.
B. Yes, a will always have larger function values as x gets larger and larger.
C. No, we need to extend the graph to include larger values of x. Once the graph is extended, d will be shown to have larger function values as x gets larger and larger.
D. Yes, d will always have larger function values as x gets larger and larger.

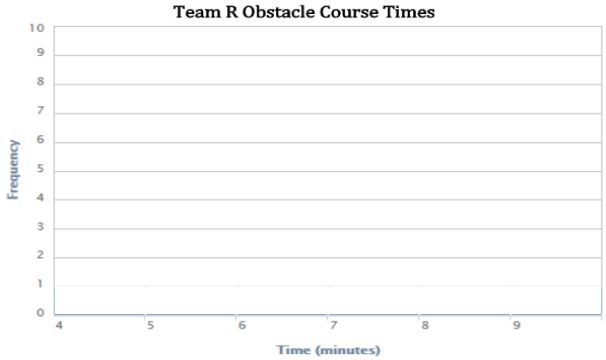
2. S-ID.1.1

Members of two cross-country teams ran an obstacle course. The table shows the times, in minutes and seconds, for the members of team R to complete the course.

Team R Obstacle Course Times

5:32	6:48	4:25	8:05	7:23
5:37	5:12	6:26	5:31	4:43
6:08	7:16	5:52	5:21	6:53
4:49	5:02	6:33	5:54	6:20

Create a histogram showing the data for team R.



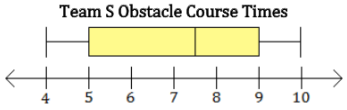
3. S-ID.1.2

Members of two cross-country teams ran an obstacle course. The table shows the times, in minutes and seconds, for the members of team R to complete the course.

Team R Obstacle Course Times

5:32	6:48	4:25	8:05	7:23
5:37	5:12	6:26	5:31	4:43
6:08	7:16	5:52	5:21	6:53
4:49	5:02	6:33	5:54	6:20

The obstacle course times, in minutes and seconds, for team S are summarized in the box plot shown.



Which statements are true about the data for team R and team S? Select **all** that apply.

A. The median time of team R is less than the median time of team S.
B. The median time of team R is greater than the median time of team S.
C. The interquartile range of team R is less than the interquartile range of team S.
D. The interquartile range of team R is equal to the interquartile range of team S.
E. The data for team R is skewed to the left.
F. The data for team S includes an outlier.

4. S-ID.1.3

Nick and Juan are comparing their scores on ten Algebra quizzes and determine that they both have the same mean score. They also discover that the standard deviation for Nick's scores is 17.1, while the standard deviation for Juan's scores is 4.6. Which statement about the two sets of quiz scores must be true?

A. The median of Juan's scores is lower than the median of Nick's scores.
B. Nick's scores are, on average, 12.5 points higher than Juan's scores.
C. Nick's scores are more spread out than Juan's scores.
D. Nick's highest score is greater than Juan's highest score.

5. S-ID.2.5

1,000 smartphone users were surveyed about how they use their phones on a daily basis. Their responses are shown in the table below. What is the relative frequency of the participants who don't have an unlimited data plan and have paid for an app?

	Paid for an app	Haven't paid for an app
Have an unlimited data plan	328	110
Don't have an unlimited data plan	260	302

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Day 5

1. **F-LE.1.3**

Which function appears to increase fastest as x gets larger and larger and will eventually have the greatest function values?

x	$f(x)$	$g(x)$	$m(x)$	$n(x)$
0	1	0	0	0
10	9	500	1000	50
20	87	2000	8000	100
30	808	4500	27,000	150
40	7523	8000	64,000	200
50	70,065	12,500	125,000	250
60	652,530	18,000	216,000	300

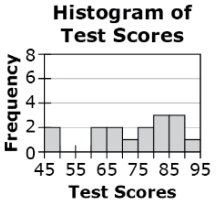
A. f C. g

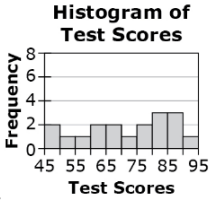
B. m D. n

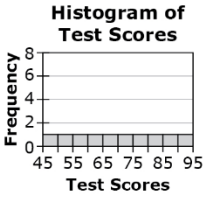
2. **S-ID.1.1**

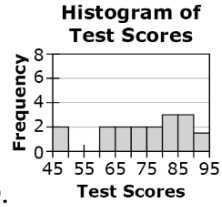
Select the histogram that represents the given test scores.

91, 48, 86, 73, 86, 49, 77, 86, 64, 78, 64, 82, 68, 82, 68, 82

A. 

B. 

C. 

D. 

3. **S-ID.1.2**

Doug is going to ride his bicycle 3,000 miles across the United States, from coast-to-coast. He wants to choose the route that will give him the greatest chance of success. Here's what he finds in his research:

- There have been 2 attempts on the northern route from Maine to Washington. Both of those riders made it 2,000 miles and quit in Montana.
- There have been 19 attempts on the central route from Virginia to California; 9 of those riders didn't make it out of Virginia and the other 10 made it all the way to the Pacific.
- There have been 32 attempts on the southern route from Florida to San Diego. One of those riders made it the whole way. Another one went half a mile, realized he was out of shape, and quit. The other 30 riders quit somewhere in Texas. They were evenly distributed between 1,300 and 1,700 miles

Which of the following is true? Select **ALL** that apply.

A. The standard deviation for distance traveled on the northern route is very low.

B. The standard deviation for distance traveled on the southern route is less than the standard deviation for the distance traveled on the central route.

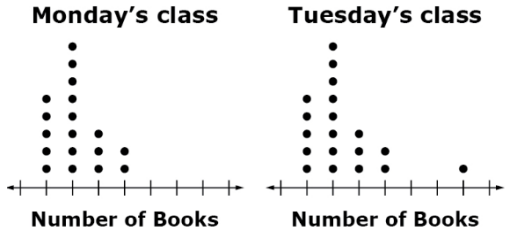
C. The southern route has the lowest median distance traveled among the three routes.

D. The interquartile range for distance traveled on the southern route is less than 500 miles.

E. The range for distance traveled is highest on the northern route.

4. **S-ID.1.3**

On Monday, Mr. Dickens asked his class how many books they read last month and set up a dot plot showing the information. On Tuesday, Walter joined the class and his information was added to the dot plot.



Select whether the value of each statistics, for the number of books read, is greater for Monday's class, equal for both days, or greater for Tuesday's class based on the dot plots.

	Greater for Monday's class	Equal for Both Days	Greater for Tuesday's class
Mean			
Median			
Standard Deviation			

5. **S-ID.2.5**

A poll of 100 senior citizens in a retirement community asked about the types of electronic communication they used. The table shows the joint and marginal frequencies from the poll results. If you are given that one of the people polled uses text messaging, what is the probability that the person is also using e-mail? Express your answer as a decimal. If necessary, round your answer to the nearest hundredth.

A. 0.65

B. 0.61

C. 0.8

D. 0.13

		Uses text messaging		
		Yes	No	Total
Uses e – mail	Yes	0.17	0.66	0.83
	No	0.11	0.06	0.17
	Total	0.28	0.72	1

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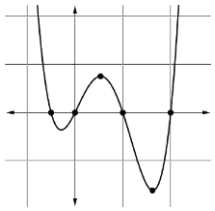
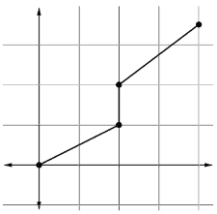
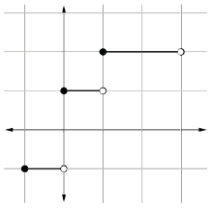
Day 1

1. **F-IF.1.1**
   Which diagram does *not* represent a function?

   A. 

   B. 

   C. 

   D.

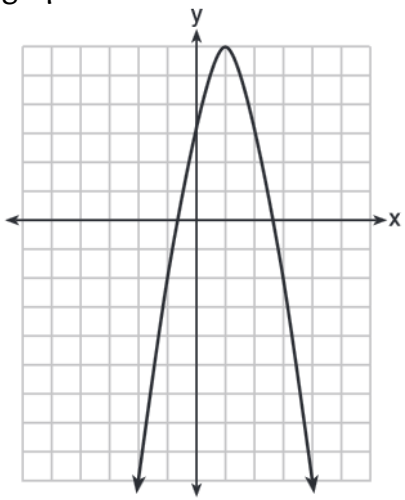
x	f(x)
1	1
2	1
3	3
4	3
5	7
6	8

2. **F-IF.1.2**
   If f(x) = 2^x + 4 and g(x) = x^2 – 4, the value of $f(5) + g(-3)$ is
   A. 16
   B. 23
   C. 34
   D. 41

3. **F-IF.2.4**
   The value of the x-intercept for the graph of $4x - 5y = 40$ is
   A. 10
   B. $\frac{4}{5}$
   C. $-\frac{4}{5}$
   D. -8

4. **F-IF.2.5**
   Officials in a town use a function, C, to analyze traffic patterns. C(n) represents the rate of traffic through an intersection where n is the number of observed vehicles in a specified time interval. What would be the most appropriate domain for the function?
   A. $\{\dots, -2, -1, 0, 1, 2, 3, \dots\}$
   B. $\{-2, -1, 0, 1, 2, 3\}$
   C. $\{0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}\}$
   D. $\{0, 1, 2, 3, \dots\}$

5. **F-IF.3.9**
   Let f be the function represented by the graph below.



   Let g be a function such that $g(x) = -\frac{1}{2}x^2 + 4x + 3$. Determine which function has the larger maximum value. Justify your answer.

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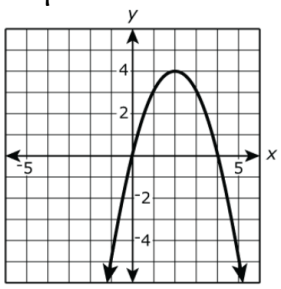
Day 2

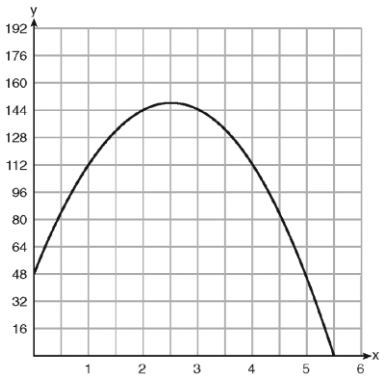
1. **F-IF.1.1**
   The figure shows a graph of the function f(x) in the xy-coordinate plane. A second function g is defined by $g(x) = -3x + 2$. Select the correct phrase in each drop-down menu to complete the sentence.



$f(2)$	Choose... is less than / is greater than / is equal to	$g(2)$ *and* $f(-1)$	Choose... is less than / is greater than / is equal to	$g(-1)$

2. **F-IF.1.2**
   If $f(x) = \frac{1}{3}x + 9$, which statement is always true?
   A. $f(x) < 0$
   B. $f(x) > 0$
   C. If $x < 0$, then $f(x) < 0$
   D. If $x > 0$, then $f(x) > 0$

3. **F-IF.2.4**
   A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands on the ground. The graph below shows the height, y, of the ball from the ground after x seconds.



   For which interval is the ball's height always *decreasing*?
   A. $0 \leq x \leq 2.5$
   B. $0 < x < 5.5$
   C. $2.5 < x < 5.5$
   D. $x \geq 2$

4. **F-IF.2.5**
   The function $h(t) = -16t^2 + 144$ represents the height, $h(t)$, in feet, of an object from the ground at t seconds after it is thrown horizontally off a cliff. A realistic domain for this function is
   A. $-3 \leq t \leq 3$
   B. $0 \leq t \leq 3$
   C. $0 \leq h(t) \leq 144$
   D. All real numbers

5. **F-IF.3.9**
   The function $A(t) = 99t$ describes the cost of Cell Phone Plan A (in dollars) for t months. The table below shows the cost of Cell Phone Plan B for t months. Which plan will cost more for 6 months, and which function describes the cost of Plan B?

t	1	2	3
B(t)	$150	$200	$250

   A. Plan B; $B(t) = 100t + 50$
   B. Plan B; $B(t) = 50t + 100$
   C. Plan A; $B(t) = 100t + 50$
   D. Plan A; $B(t) = 50t + 100$

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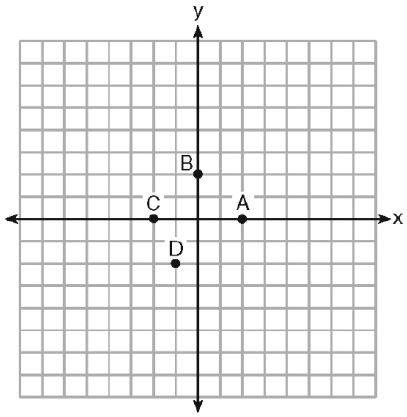
Day 3

1. **F-IF.1.1**
Jerome is constructing a table of values that satisfies the definition of a function. What number(s) can be placed in the empty cell so that the table of values satisfies the definition of a function? Select **all** that apply.

Input	-13	20	0	-4	11	-1	17	
Output	-15	-11	-9	-2	-1	5	5	13

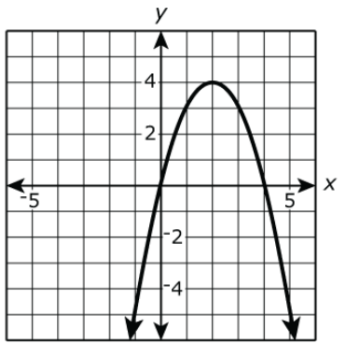
A. -5
B. -1
C. 0
D. 2
E. 11
F. 17

2. **F-IF.1.2**
The graph of $y = f(x)$ is shown below.



Which point could be used to find $f(2)$?
A. A
B. B
C. C
D. D

3. **F-IF.2.4**
The function $f(x) = 4x - x^2$ is graphed as shown.



Drag the correct word to the box with each given interval to indicate whether the function is increasing or decreasing on that interval.

Increasing	Decreasing

$x < 0$	$0 < x < 2$	$2 < x < 4$	$x > 4$

4. **F-IF.2.5**
A vacation home in Orlando, FL rents for $105 per day. The function f(x)=105x gives the cost of renting the home for x days. What is the domain of this function?
A. $x \geq 0$
B. $\{0, 1, 2, 3, \ldots\}$
C. $\{0, 105, 210, 315, \ldots\}$
D. *all real numbers*

5. **F-IF.3.9**
Which quadratic function has a smaller maximum value? Explain your reasoning.
Quadratic Function 1 can be modeled by the equation $y = -x^2 - 4x + 2$
Quadratic Function 2 has zeros at x=0 and x=4 with a maximum vertex.

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Day 4

1. **F-IF.1.1**
   Which set of ordered pairs represents a function?
   A. $\{(-1,1),\ (0,0),(1,1),(2,2)\}$
   B. $\{(3,-3),\ (2,-2),(1,-1),(1,1)\}$
   C. $\{(4,2),\ (4,-2),(9,3),(9,-3)\}$
   D. $\{(-2,-1),\ (-2,0),(-2,1),(-2,2)\}$

2. **F-IF.1.2**
   What is f(-8) for the function f?
   $f(x) = \dfrac{11(x-24)}{2}$
   A. -56
   B. -88
   C. -176
   D. -352

3. **F-IF.2.4**
   For $f(x) = -\frac{2}{5}x + 3$, find the slope and determine whether the graph is increasing or decreasing.
   A. $-\frac{2}{5}$, increasing
   B. $-\frac{2}{5}$, decreasing
   C. 3, increasing
   D. 3, decreasing

4. **F-IF.2.5**
   A local theater sells admission tickets for $9.00 on Thursday nights. At capacity, the theater holds 100 customers. The function $M(n) = 9n$ represents the amount of money the theater takes in on Thursday nights, where *n* is the number of customers. What is the domain of *M(n)* in this context? Select the correct answer.
   A. All whole numbers
   B. All non-negative rational numbers
   C. All non-negative integers that are multiples of 9
   D. All non-negative integers less than or equal to 100

5. **F-IF.3.9**
   Which linear function is increasing at a greater rate? Explain your reasoning.
   Linear Function 1 has an x-intercept of (4, 0) and a y-intercept at (0, 22)
   Linear function 2 includes the points in the table below.

x	−2	−1	0	1	2
y	−3	−1	1	3	5

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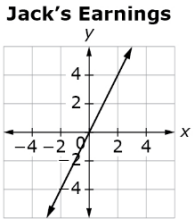
Day 5

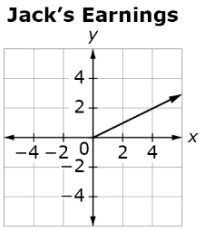
1. **F-IF.1.1**
   Gary works no more than 9 hours on weekends and gets paid $10 per hour. He works whole-hour shifts. His pay *P* is a function of the number of hours he works *n*. What is the range of this function?
   A. $0 \leq n \leq 9$
   B. $0 \leq P \leq 90$
   C. $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$
   D. $\{0, 10, 20, 30, 40, 50, 60, 70, 80, 90\}$

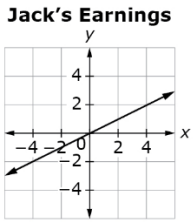
2. **F-IF.1.2**
   Find the value of x so that $f(x) = 13$, given that $f(x) = x - 10$.

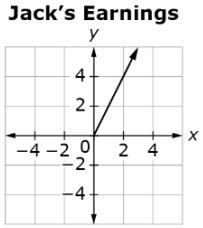
3. **F-IF.2.4**
   How would the graphs of $f(x) = 2x + 6$ and $g(x) = 2x + 4$ compare if graphed on the same coordinate plane?
   A. The graphs would intersect at (0, 2)
   B. The graph of f(x) would be twice as steep as the graph of g(x)
   C. The graph of f(x) would be 2 units above the graph of g(x)
   D. The graph of f(x) would be 6 units above the graph of g(x)

4. **F-IF.2.5**
   Select the graph that correctly represents the amount of money, y, Jack earns doing chores for x hours at $2 an hour if he works for a maximum of 8 hours.

A. 

C. 

B. 

D. 

5. **F-IF.3.9**
   F is a function defined on all real numbers with the following equation $f(x) = -2x + 6$. G is a function defined on all integers between -3 and 3 (inclusive) with the following table of values.

x	-3	-2	-1	0	1	2	3
g(x)	12	15	16	15	12	7	0

   Which of the features are shared by f(x) and g(x)? Select all that apply.
   A. They have the same y-intercept.
   B. They reach their maximum value at the same x-value.
   C. They are both increasing for the entire interval between -3 and 3 (inclusive)
   D. They are both decreasing for the interval between 0 and 3 (inclusive)
   E. They share an x-intercept.
   F. They have the same slope.

Name: _____ Date: _____

Algebra 1 Math: Week 8 FSA Countdown Period: _____

Day 1

1. A-CED.1.1

At a yearly basketball tournament, 64 different teams compete. After each round of the tournament, half of the teams remain, as shown in the accompanying table. Which equation models the relationship between the round and the number of teams remaining?

Round, r	Number of teams, t, remaining
0	64
1	32
2	16
3	8

A. $t = 64(0.5)^r$
B. $t = 64(2)^r$
C. $t = 64(0.5)^{r-1}$
D. $t = 64(2)^{r-1}$

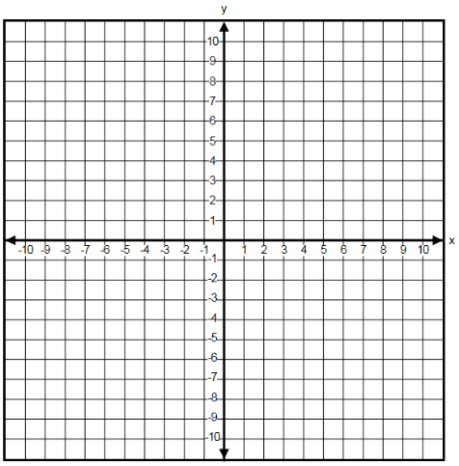
2. A-CED.1.2

At the school bookstore, a pencil costs 25¢, a notebook costs $1.75, and a piece of graph paper costs 5¢. Which formula below could be used to determine the total cost c, in cents, of purchasing p pencils, n notebooks, and g pieces of graph paper?

A. $c = 25p + 1.75n + 5g$
B. $c = 25p + 175n + 5g$
C. $c = 0.25p + 1.75n + 0.05g$
D. $c = 0.25p + 1.75n + 0.5g$

3. A-REI.4.10

The ordered pairs $(20, -29.5), (21, -31), and\ (22, -32.5)$ are points on the graph of a linear equation. Graph the line that shows all of the ordered pairs in the solution set of this linear equation. You must graph the line on the provided grid.

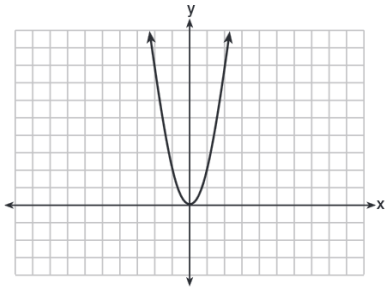


4. A-REI.4.11

Next weekend Marnie wants to attend either carnival *A* or carnival *B.* Carnival *A* charges $6 for admission and an additional $1.50 per ride. Carnival *B* charges $2.50 for admission and an additional $2 per ride. In function notation, write A(x) to represent the total cost of attending carnival A and going on x rides. In function notation, write B(x) to represent the total cost of attending carnival B and going on x rides. Determine the number of rides Marnie can go on such that the total cost of attending each carnival is the same.

5. F-BF.2.3

The graph of the equation $y = ax^2$ is shown below. If *a* is multiplied by $-\frac{1}{2}$, the graph of the new equation is



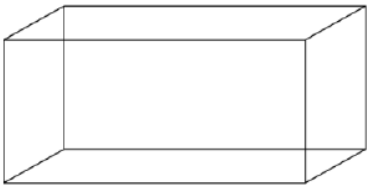
A. Wider and opens downward
B. Wider and opens upward
C. Narrower and opens downward
D. Narrower and opens upward

Name: _____ Date: _____

Algebra 1 Math: Week 8 FSA Countdown Period: _____

Day 2

1. **A-CED.1.1**
   Paul purchased a new fish tank, represented by the diagram below. The height, *h*, of the tank is 3 feet, and the width, *w*, is 6 feet longer than the length, *l*. The volume of the tank ($V = lwh$) is 60 ft^3. Write an equation that could be used to calculate the length of the tank.



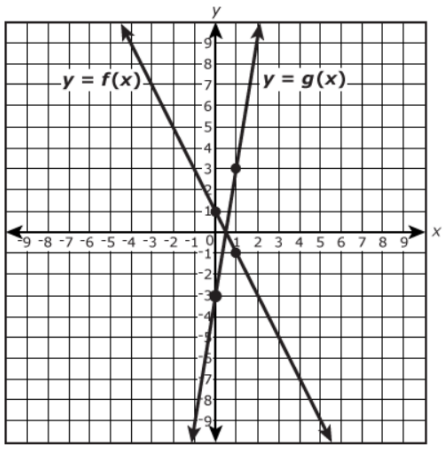
2. **A-CED.1.2**
   Luis spent $55 buying songs and movies at an online store that charges $1.25 for each song and $2.75 for each movie. He purchased a total of 26 songs and movies combined. Write a system of equations that represents this situation.

3. **A-REI.4.10**
   Is the point (3, 2) a solution to the equation $y = -\frac{3}{4}x + 3$? Explain your answer using a graph or with a verbal description.

4. **A-REI.4.11**
   If $f(x) = -x + 5$ and $g(x) = x^2$, what is the solution set of the equation $f(x) = g(x)$, rounded to the *nearest tenth?*
   A. {1.8, -2.8}
   B. {1.8}
   C. {(1.8, 3.2), (-2.8, 7.8)}
   D. {(1.8, 3.2)}

5. **F-BF.2.3**
   The figure shows the graphs of the functions $y = f(x)$ and $y = g(x)$. The four indicated points all have integer coordinates. If $g(x) = k \cdot f(x)$, what is the value of k? Enter your answer in the box.

$k =$ ☐



Name: _____ Date: _____

Algebra 1 Math: Week 8 FSA Countdown Period: _____

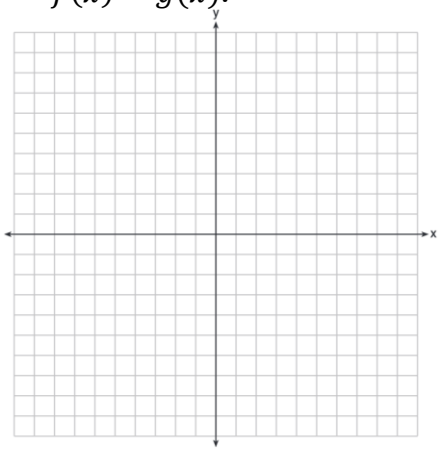
Day 3

1. **A-CED.1.1**
   The length of the shortest side of a triangle is 8 inches. The lengths of the other two sides are represented by consecutive odd integers. Which equation could be used to find the lengths of the other sides of the triangle?
   A. $8^2 + (x+1) = x^2$
   B. $x^2 + 8^2 = (x+1)^2$
   C. $8^2 + (x+2)^2 = x^2$
   D. $x^2 + 8^2 = (x+2)^2$

2. **A-CED.1.2**
   Tom lives in a town 360 miles directly north of New York City, and one Saturday, he takes the train from his town to the city. The train travels at a constant speed, and after 2.5 hours, he sees a sign that states, "New York City: 210 miles." Write an equation to represent d(x), the distance Tom is from New York City after x hours.

3. **A-REI.4.10**
   Which point is *not* on the graph represented by $y = x^2 + 3x - 6$?
   A. $(-6, 12)$
   B. $(-4, -2)$
   C. $(2, 4)$
   D. $(3, -6)$

4. **A-REI.4.11**
   Let $f(x) = -2x^2$ and $g(x) = 2x - 4$. On the set of axes below, draw the graphs of $y = f(x)$ and $y = g(x)$. Using this graph, determine and state *all* values of x for which $f(x) = g(x)$.



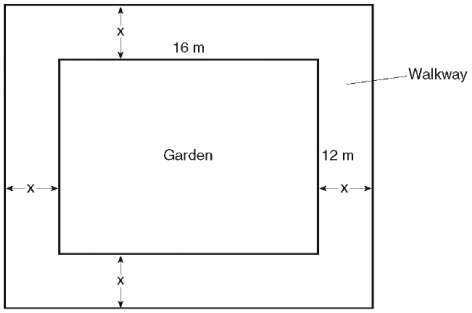
5. **F-BF.2.3**
   The vertex of the parabola represented by $f(x) = x^2 - 4x + 3$ has coordinates $(2, -1)$. Find the coordinates of the vertex of the parabola defined by $g(x) = f(x - 2)$. Explain how you arrived at your answer.

Name: _____ Date: _____

Algebra 1 Math: Week 8 FSA Countdown Period: _____

Day 4

1. **A-CED.1.1**
   A rectangular garden measuring 12 meters by 16 meters is to have a walkway installed around it with a width of *x* meters, as shown in the diagram below. Together, the walkway and the garden have an area of 396 square meters. Write an equation that can be used to find *x*, the width of the walkway.

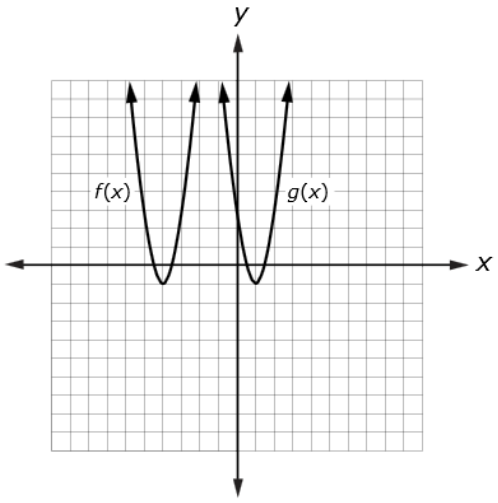


2. **A-CED.1.2**
   An animal shelter spends $2.35 per day to care for each cat and $5.50 per day to care for each dog. Pat noticed that the shelter spent $89.50 caring for cats and dogs on Wednesday. Pat found a record showing that there were a total of 22 cats and dogs at the shelter on Wednesday. How many cats were at the shelter on Wednesday?

3. **A-REI.4.10**
   Which ordered pair is a solution to $mx + ny = 0$?
   A. (m, n)
   B. (0, 0)
   C. (0, n)
   D. (n, m)

4. **A-REI.4.11**
   A company is considering building a manufacturing plant. They determine the weekly production cost at site A to be $A(x) = 3x^2$ while the production cost at site B is $B(x) = 8x + 3$, where x represents the number of products, *in hundreds*, and A(x) and B(x) are the production costs, *in hundreds of dollars*. State the positive value(s) of x for which the production costs at the two sites are equal. Explain how you determined your answer.

5. **F-BF.2.3**
   Which equation relates $f(x)$ with $g(x)$?



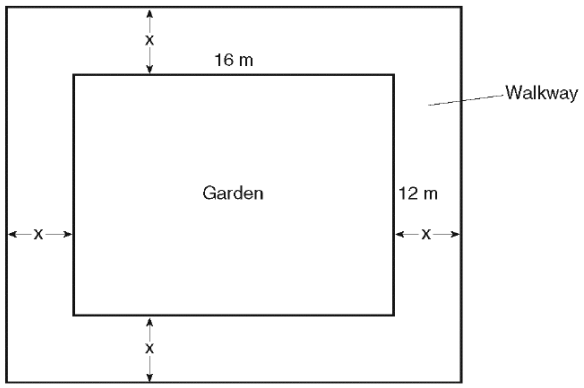
   A. $g(x) = f(x) + 5$
   B. $g(x) = f(x) - 5$
   C. $g(x) = f(x + 5)$
   D. $g(x) = f(x - 5)$

Name: _____ Date: _____

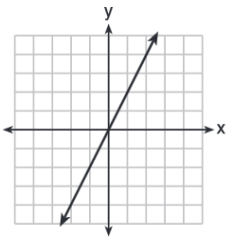
Algebra 1 Math: Week 8 FSA Countdown Period: _____

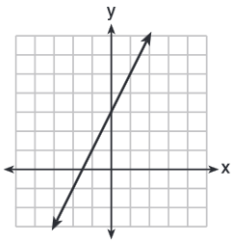
Day 5

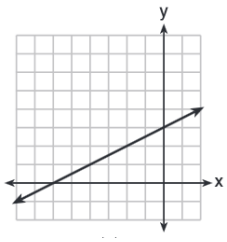
1. **A-CED.1.1**
   A rectangular garden measuring 12 meters by 16 meters is to have a walkway installed around it with a width of *x* meters, as shown in the diagram below. Together, the walkway and the garden have an area of 396 square meters. Use the equation you created from *Day 4*, to determine the width of the walkway, in meters.

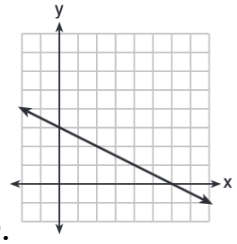


2. **A-CED.1.2**
   Which graph shows a line where each value of *y* is three more than half of *x*?

A.


C.


B.


D.


3. **A-REI.4.10**
   Which ordered pair is *not* a solution to $2x + 3y = 12$?
   A. (0, 4)
   B. (3, 2)
   C. (2, 3)
   D. (6, 0)

4. **A-REI.4.11**
   A company is considering building a manufacturing plant. They determine the weekly production cost at site A to be $A(x) = 3x^2$ while the production cost at site B is $B(x) = 8x + 3$, where x represents the number of products, *in hundreds*, and A(x) and B(x) are the production costs, *in hundreds of dollars*. If the company plans on manufacturing 200 products per week, which site should they use? Justify your answer.

5. **F-BF.2.3**
   Which statement is **NOT** true about the functions $f(x) = 1.2(1.05)^x$ and $g(x) = 1.2(1.07)^x$?
   A. As x increases without bound, f(x) and g(x) both increase without bound.
   B. As x increases to the right of 0, the value of g(x) is greater than the value of f(x) for every value of x.
   C. The y-intercept of g(x) is greater than the y-intercept of f(x).
   D. The y-intercept of g(x) is equal to the y-intercept of f(x).

Name: _____ Date: _____

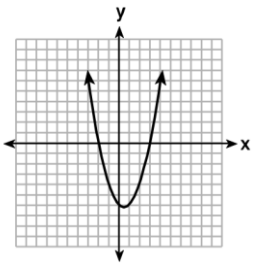
Algebra 1 Math: Week 9 FSA Countdown Period: _____

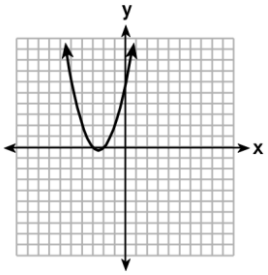
Day 1

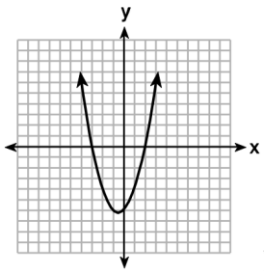
1. **A-CED.1.1**
   An animal shelter spends $2.35 per day to care for each cat and $5.50 per day to care for each dog. Pat noticed that the shelter spent $89.50 caring for cats and dogs on Wednesday. Pat said that there might have been 8 cats and 14 dogs at the shelter on Wednesday. Are Pat's numbers possible? Use an equation to justify your answer.

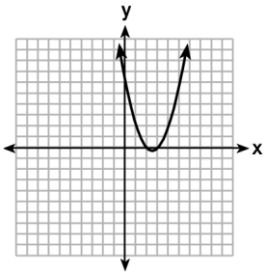
2. **N-RN.1.2**
   Enter the value of x such that $\sqrt[4]{64^{\frac{1}{3}}} = 64^{\frac{1}{x}}$

3. **A-APR.2.3**
   The graphs below represent functions defined by polynomials. For which function are the zeros of the polynomials 2 and -3?

   A. 

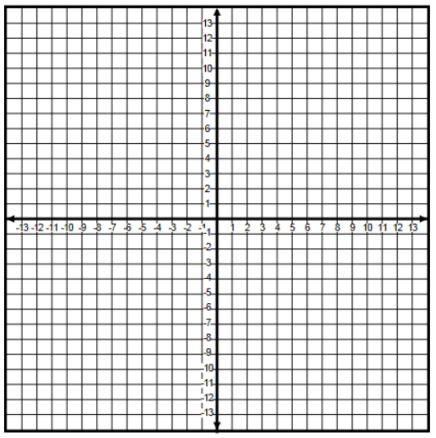
   B. 

   C. 

   D. 

4. **F-IF.3.7**
   Graph $f(x) = -(x-2)^2 + 4$.
   - *Select a button to choose the type of graph.*
   - *Drag the two points to the correct positions.*

   Linear
   Absolute Value
   Quadratic
   Exponential
   Logarithmic
   Sin/Cos
   Tan/Cotan

5. **F-IF.3.8**
   A cliff diver's height above the water, in meters, is modeled by the function $h(d) = -d^2 + 2d + 24$, where d represents how far the diver is from the cliff. How far from the cliff will the diver be when she reaches the water?
   A. 0 meters
   B. 4 meters
   C. 6 meters
   D. 24 meters

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Day 2

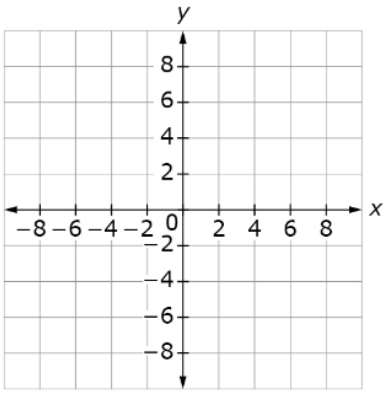
1. **A-CED.1.1**
   An animal shelter spends $2.35 per day to care for each cat and $5.50 per day to care for each dog. Pat noticed that the shelter spent $89.50 caring for cats and dogs on Wednesday. Write an equation to represent the possible number of cats and dogs that could have been at the shelter on Wednesday.

2. **N-RN.1.2**
   Determine whether each expression is equivalent to $x^{\frac{5}{3}}$. Select Yes or No for each expression.

	Yes	No
$\sqrt[5]{x^3}$		
$\sqrt[3]{x^5}$		
$\left(\sqrt[3]{x}\right)^5$		
$\sqrt{x^{\frac{5}{3}}}$		

3. **A-APR.2.3**
   Determine all zeroes of the function $f(x) = x^3 + 3x^2 - 4x - 12 = (x + 3)(x^2 - 4)$ algebraically.

4. **F-IF.3.7**
   Given a linear function with a slope $\frac{2}{3}$ and a y-intercept of 2:
   - Using the Add Arrow tool, draw a line on the coordinate grid to graph the function
   - Place a point on the line representing the x-intercept of the function.



5. **F-IF.3.8**
   Use a method of completing the square in order to rewrite the function $f(x) = x^2 + 5x - 2$ in vertex form, $f(x) = a(x - h)^2 + k$, where (h, k) is the vertex of the parabola.

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Algebra 1 Math: Week 9 FSA Countdown Period: _____

Day 3

1. **A-CED.1.1**
   Donna wants to make trail mix made up of almonds, walnuts, and raisins. She wants to mix one part almonds, two parts walnuts, and three parts raisins. Almonds cost $12 per pound, walnuts cost $9 per pound, and raisings cost $5 per pound. Donna has $15 to spend on the trail mix. Determine how many pounds of trail mix she can make.

2. **N-RN.1.2**
   Select an expression that is equivalent to
   $5^{\frac{3}{8}} \cdot \sqrt[4]{5^2}$.

   A. $5^{\frac{6}{32}}$

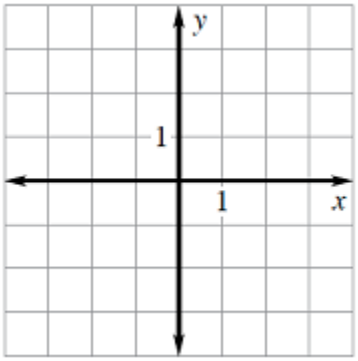
   B. $5^{\frac{5}{12}}$

   C. $5^{\frac{12}{16}}$

   D. $5^{\frac{7}{8}}$

3. **A-APR.2.3**
   For which function defined by a polynomial are zeros of the polynomial -4 and -6?
   A. $y = x^2 - 10x - 24$
   B. $y = x^2 + 10x + 24$
   C. $y = x^2 + 10x - 24$
   D. $y = x^2 - 10x + 24$

4. **F-IF.3.7**
   Graph the function $f(x) = (x + 1)(x - 2)$



5. **F-IF.3.8**
   Use a method of completing the square in order to rewrite the function $f(x) = x^2 + 5x - 2$ in vertex form, $f(x) = a(x - h)^2 + k$, where (h, k) is the vertex of the parabola. State the exact value of the vertex.

Name: _____ Date: _____

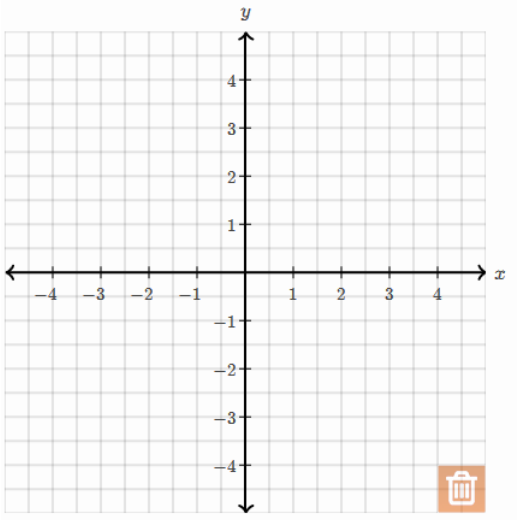
Algebra 1 Math: Week 9 FSA Countdown Period: _____

Day 4

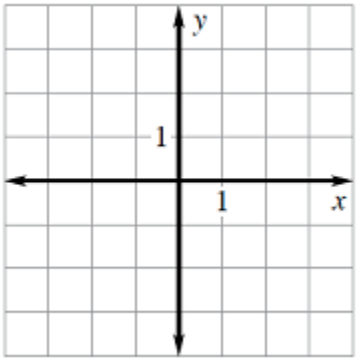
1. **A-CED.1.1**
   Sam and Jeremy have ages that are consecutive odd integers. The product of their ages is 783. Which equation could be used to find Jeremy's age, j, if he is the younger man?
   A. $j^2 + 2 = 783$
   B. $j^2 - 2 = 783$
   C. $j^2 + 2j = 783$
   D. $j^2 - 2j = 783$

2. **N-RN.1.2**
   Write an expression with a radical equivalent to $3^{\frac{6}{9}}$.

3. **A-APR.2.3**
   Graph a quadratic function that meets all of the following criteria:
   - Has a leading coefficient of 2
   - Has one zero at x = -3
   - Has an axis of symmetry at x = -1



4. **F-IF.3.7**
   Graph the function $f(x) = (2)^x - 3$



5. **F-IF.3.8**
   Write the function $y - 3 = \frac{2}{3}(x - 4)$ in the equivalent form **most** appropriate for identifying the slope and y-intercept of the function.

Name: _____ Date: _____

Algebra 1 Math: Week 9 FSA Countdown Period: _____

Day 5

1. **A-CED.1.1**
   A school is building a rectangular soccer field that has an area of 6000 square yards. The soccer field must be 40 yards longer than its width. Create an algebraic equation that can be used to determine the dimensions of the soccer field, in yards.

2. **N-RN.1.2**
   Select an expression equivalent to $16^{\frac{1}{4}} \cdot 16^{\frac{2}{3}}$.

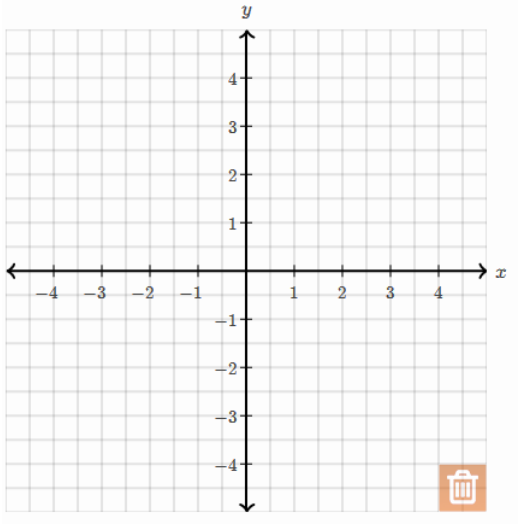
   A. $\sqrt[12]{16^{11}}$

   B. $\sqrt[7]{16^{3}}$

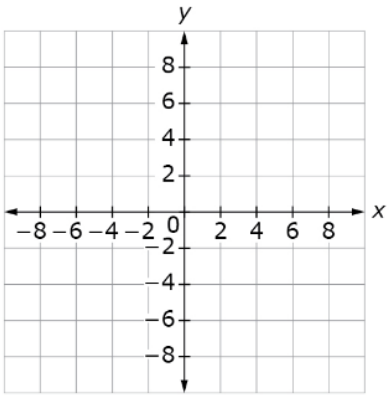
   C. $\sqrt[12]{16^{2}}$

   D. $\sqrt[6]{16^{4}}$

3. **A-APR.2.3**
   Given polynomial p(x) where $p(x) = x(2x - 1)(x - 3)$, plot the zeros on the graph below.



4. **F-IF.3.7**
   Given the function $y = -x^2 + x + 6$,
   - Place a point on the coordinate grid to show each x-intercept of the function.
   - Place a point on the coordinate grid to show the maximum value of the function.



5. **F-IF.3.8**
   The area, A, of a pigpen on a farm can be modeled by the equation $A = -2x^2 + 36x$, where x is the width, in feet, of the pen.

   When the equation is graphed in a coordinate plane, the x-intercepts are (0, 0) and [Choose… (4, 0) (8, 0) (18, 0) (32, 0)] **which represents a lower bound and an upper bound for the possible values for the** [Choose… area length volume width] **of the pen.**

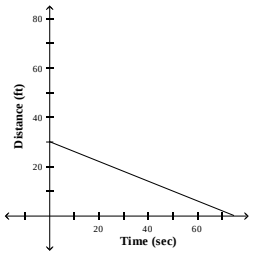
Name: _____ Date: _____

Algebra 1 Math: Week 10 FSA Countdown Period: _____

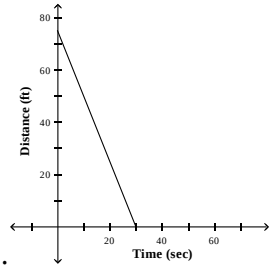
Day 1

1. **F-IF.3.7**
   A swimmer is racing to the other side of the pool. The pool is 75 feet long. The swimmer travels 2.5 feet per second. Create a graph to represent the swimmer's distance to the other side of the pool with relation to time.

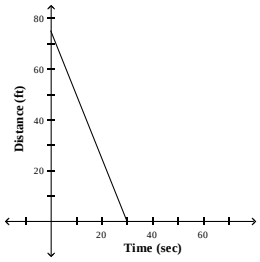
A.



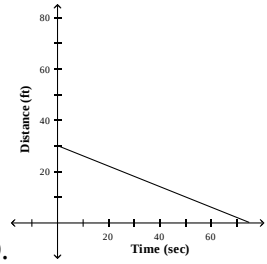
C.



B.



D.



2. **A-REI.3.6**
   What is the value of x in the solution of the system of equations below?
   $\begin{cases} 3x - 2y = 6 \\ x + 2y = 10 \end{cases}$
   A. 2
   B. 4
   C. 10
   D. 16

3. **A-REI.4.12**
   Which ordered pairs is a solution to $-5x + 3y > 12$? (Select all that apply)
   A. (3, 9)
   B. (-5, 5)
   C. (3, -6)
   D. (-2, -5)
   E. (2, 8)
   F. (-6, 0)

4. **F-LE.1.2**
   A certain type of lily plant is going in a pond in such a way that the number of plants is growing exponentially. The number of plants N in the pond at time t is modeled by the function $N(t) = ab^t$, where a and b are constants and t is measured in months. The table shows two values of the function.

t	N(t)
0	150
1	450

   Complete the equation. Explain your answer in the space provided.

5. **A-SSE.2.3**
   Consider the function $f(x) = 2x^2 + 6x - 8$. Fill in the missing portions of the equation to rewrite $f(x)$ to reveal the vertex of the graph of the function. Enter your answer in the boxes. Use decimals if necessary.

$f(x) = 2(x + \square)^2 + \square$

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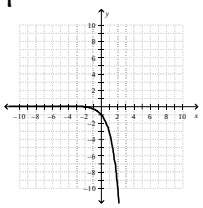
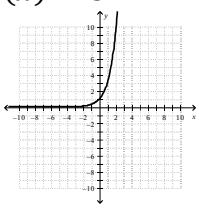
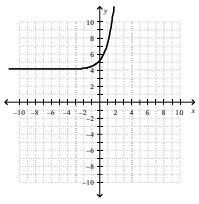
Day 2

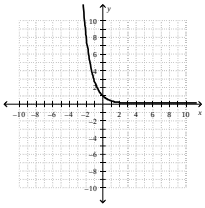
1. **F-IF.3.7**

Graph the function $f(x) = 3^x$

A. 

C. 

B. 

D. 

2. **A-REI.3.6**

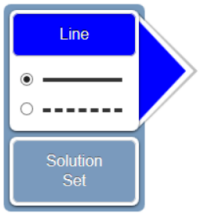
A chef is making 20 pounds of fruit salad to sell in his shop. The chef will use only grapes and blueberries in the fruit salad. Let x represent the number of pounds of grapes the chef will use and y represent the number of pounds of blueberries the chef will use. Grapes cost $2.50 per pound and blueberries cost $4.00 per pound. Given the chef spent a total of $59.00 for grapes and blueberries for the fruit salad, determine the number of pounds of grapes **and** the number of pounds of blueberries the chef will use to make the fruit salad.

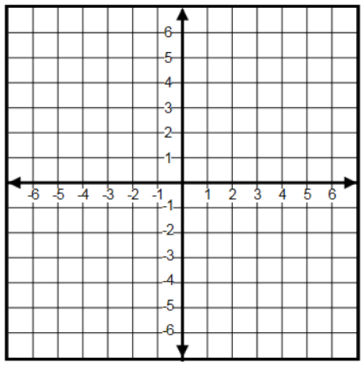
3. **A-REI.4.12**

Graph the solution set of $2x + y > 6$.

Graph the solution set of the linear inequality in the coordinate plane by

- *Selecting the "line" button to graph the line and choosing the line style,*
- *Selecting the "solution set" button to select the desired region.*





4. **F-LE.1.2**

The students in a high school environmental club are trying to raise community awareness of a recycling program for old cell phones. Janine, a member of the club, created a website that members of the community can view to get more information about the program. The number of times that the website is viewed each day is recorded as a hit. On day 1, the website received 2 hits, and on day 3 the website received 8 hits. Based on the data from days 1 and 3, Janine claims that the number of hits *h* on day *d* can be modeled by an exponential function. What is the number of hits predicted on day 6 by an exponential model? Enter your answer in the box.

5. **A-SSE.2.3**

Consider the function $f(x) = 2x^2 + 6x - 8$. Fill in the missing portions of the equation to rewrite $f(x)$ to reveal the zeros of the function. Enter your answer in the boxes. Use decimals if necessary.

$f(x) = 2(x + \square)(x + \square)$

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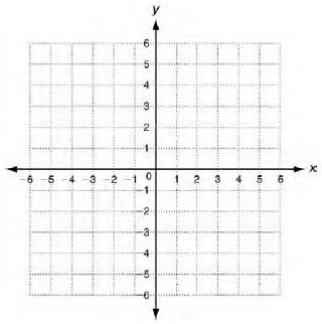
Day 3

1. **F-IF.3.7**

   Graph the line described by $y = \frac{5}{2}x - 4$.



2. **A-REI.3.6**

   What is the value of x in the solution of the system of equations below?

$$\begin{cases} 4x + y = 72 \\ y = 5x \end{cases}$$

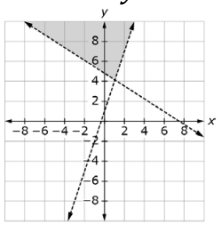
3. **A-REI.4.12**

   Select the graph that shows the solution set of the system of linear inequalities:

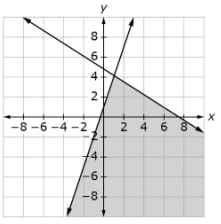
$$y > -\frac{2}{3}x + 5$$

$$y > 3x + 1$$

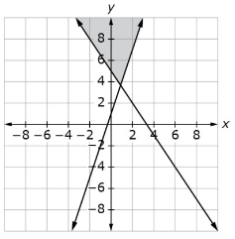
A.



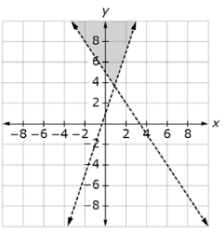
B.



C.



D.



4. **F-LE.1.2**

The students in a high school environmental club are trying to raise community awareness of a recycling program for old cell phones. Janine, a member of the club, created a website that members of the community can view to get more information about the program. The number of times that the website is viewed each day is recorded as a hit. On day 1, the website received 2 hits, and on day 3 the website received 8 hits. Raul is also a member of the environmental club. He disagrees with Janine and claims that the number of hits each day can be modeled by a linear function. Select from the drop-down menus to complete the sentences.

On day 2, the number of hits predicted by a linear model is _____ the number of hits predicted by an exponential model.

Choose…
greater than
less than
equal to

On day 4, the number of hits predicted by a linear model is _____ the number of hits predicted by an exponential model.

Choose…
greater than
less than
equal to

5. **A-SSE.2.3**

This expression defines a function that models the future population of wolves in a park after t years.

$$3280(1.15)^t$$

Which expression best defines the function that represents the wolf population after x months?

A. $3280(1.0125)^x$
B. $3280(1.0117)^x$
C. $3280(1.12)^x$
D. $3280(1.2)^x$

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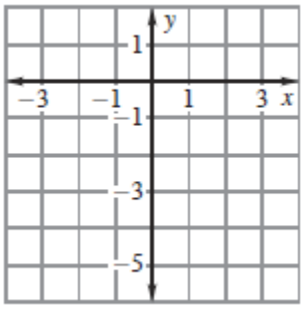
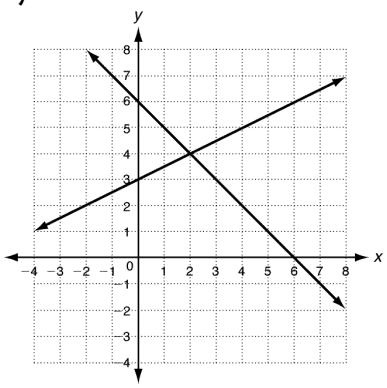
Day 4

1. **F-IF.3.7**
   Graph the function $y = x^2 - 5$. Label the vertex.



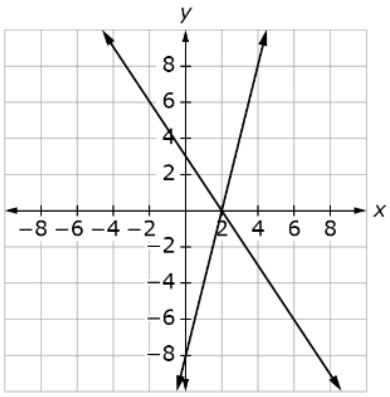
2. **A-REI.3.6**
   The graph of a system of linear equations is shown below. What is the solution to the system?



   A. (0, 3)
   B. (0, 6)
   C. (2, 4)
   D. (6, 0)

3. **A-REI.4.12**
   Shade the region of the graph that contains the solution set of the system of linear inequalities.

$$\begin{cases} 3x + 2y \leq 6 \\ 4x - y \leq 8 \end{cases}$$



4. **F-LE.1.2**
   The population of a city in 2005 was 36,000. By 2010, the city's population had grown to 43,800 people. Suppose that the population of the city is growing exponentially. Write an expression for the population in terms of t, the number of years since 2005. Enter **only** your expression.

5. **A-SSE.2.3**
   The zeros of the function $f(x) = (x + 2)^2 - 25$ are
   A. -2 and 5
   B. -3 and 7
   C. -5 and 2
   D. -7 and 3

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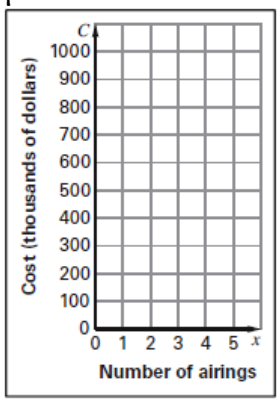
Day 5

1. **F-IF.3.7**
   An advertising company charges $150,000 each time a 30-second commercial is aired. The cost (in thousands of dollars) to produce the commercial and air it x times is given by the function $C(x) = 150x + 300$. Graph the function.

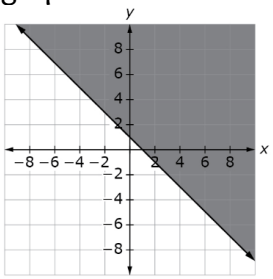


2. **A-REI.3.6**
   What is the value of x for the solution to this system of equations?

$$\begin{cases} y = -x + 2 \\ 7x + 4y = -1 \end{cases}$$

   A. -5
   B. -3
   C. 3
   D. 5

3. **A-REI.4.12**
   The graph shown represents the set of ordered pairs that are solutions to an inequality. Enter the inequality that represents the solution set shown by the graph.



4. **F-LE.1.2**
   A town's population could be modeled by the function $P(t) = 27{,}400(1.66)^{\frac{t}{10}}$, where P represents the population and t represents the time, in years, since 2005. Based on the model, by approximately what percent does the population of this town increase each year?
   A. 1
   B. 3
   C. 5
   D. 7

5. **A-SSE.2.3**
   Which equation reveals the minimum or maximum value of (x) without changing the form of the equation?
   A. $f(x) = (x-1)^2 - 4$
   B. $f(x) = x^2 - 2x - 3$
   C. $f(x) = x^2 - 3x + x - 3$
   D. $f(x) = (x+1)(x-3)$

Week 1 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-CED.1.1	$C(x) = \frac{10}{3}x$, 54 mints	$\begin{cases} 800 > b + d \\ 5000 < 6b + 9d \end{cases}$	Yes, sell >263 tickets	D	No, $95.8 \neq 89.50$
2	A-REI.1.1	A	A	C	B	$\frac{2n+6}{2} - 3 = n$
3	N-RN.1.1	C	B	$\frac{2}{3}$	17	$\frac{y}{(xz)^{1/4}} = \frac{y}{x^{1/4}z^{1/4}}$
4	N-RN.1.2	A	B	A	C	B
5	N-RN.2.3	A	C	C	Alw/Alw/Some	C

Week 2 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-REI.3.5	B	B	C	No, 2nd eq not x2	Mult. 2nd eq by 12
2	A-REI.3.6	32 hours	15 movies, 11 songs	x=18,000	v=$7, c=$8	7 three-point
3	A-REI.4.12	A, E	See answer	False	B	D
4	F-IF.2.6	A	D	C	D	A
5	S-ID.3.7	D	A	B	B	C

Week 3 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-CED.1.4	$x = \frac{15}{a-b}$	C	B	$b_1 = \frac{2A}{h} - b^2$	D
2	A-REI.2.3	B	A	a=2	A	6
3	F-BF.1.1	$A(n) = 175 - 2.75n$	63 weeks	$b(t) = 1150 \cdot 2^t$	$B(t) = 1.042^t \cdot 3000$	6 hours
4	F-IF.1.3	-2, 2, 13, 38, 91	D	D	D	D
5	F-LE.1.2	B	C	B	D	B

Week 4 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	F-LE.1.1	A	D	C	C	D
2	F-LE.2.5	A	B	50% decay per year, $300 initial amount	C	C
3	S-ID.2.6	C	For every 1 mile driven, the car uses 0.05 gallons of gas	C	D	Graph of parabola scatter (not linear)
4	S-ID.3.8	C	B	C	A	B
5	S-ID.3.9	D	C	A	A	B

Week 5 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-APR.1.1	D	$x^3 + x^2 - 5x + 28$	B	$x^2 + 10x + 16$	-4, 2, 6
2	A-REI.2.4	Terry correct, discriminant is negative	B	$l = \sqrt{\frac{10}{3}} = \frac{\sqrt{10}}{\sqrt{3}}$	$x = \pm 2\sqrt{2}$ $x = \sqrt{8}$	A, C, E
3	A-SSE.1.1	B	A	$ made from selling each calendar	A	B
4	A-SSE.1.2	A	$(x+1)(x-1)(x^2+7)$	A	$0 = h^2 + \frac{1}{2}bh - 80$	C
5	A-SSE.2.3	D	C	14.98%	$f(x) = 2(x-2)^2 + 1$ vertex (2, 1)	$g(x) = 3(x+4)(x-15)$ Zeros: -4 and 15

Week 6 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	F-LE.1.3	C	D	C	D	A
2	S-ID.1.1	Box, hist, hist, box	D	min=1, Q1=2, Q2=3, Q3=4, max=5	Histogram graph	B
3	S-ID.1.2	C	C	A	A, C	A, B, D
4	S-ID.1.3	A	Air P: mean=1, SD=12.2 (less than Air Q)	C	C	Greater, Equal, Greater
5	S-ID.2.5	A, C, D	40%	C	26%	B

Week 7 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	F-IF.1.1	B	Greater/less	A, D	A	D
2	F-IF.1.2	B	D	A	C	x=23
3	F-IF.2.4	A	C	Inc/inc/dec/dec	B	C
4	F-IF.2.5	D	B	B	D	D
5	F-IF.3.9	f(1)=6, g(4)=11	D	Q1: 6, Q2: 4	LF1: 5.5, LF2: 2	C, E

Week 8 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-CED.1.1	C	$60 = 3 \cdot 6 \cdot l$	D	396=(16+2x)(12+2x)	x=3
2	A-CED.1.2	C	$26 = s + m$ $55 = 1.25s + 2.75m$	$d(x) = 360 - 60x$	d=12, c=10	B
3	A-REI.4.10	$y = -1.5x + 0.5$	$2 \neq -\frac{9}{4} + 3$	D	B	C
4	A-REI.4.11	7 rides	A	x=1, x=-2	x=3	B(200)=1603
5	F-BF.2.3	C	$-\frac{1}{3}$	(4, -1)	D	C

Week 9 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	A-CED.1.1	No, 95.80≠89.50	2.35c+5.50d=89.50		C	$6000 = w(40 + w)$
2	N-RN.1.2	x=12	N, Y, Y, N	D	$\sqrt[3]{3^2} = \sqrt[9]{3^6} = \left(\sqrt[3]{3}\right)^2$	C
3	A-APR.2.3	C	x=-3, -2, 2	B	Parabola with pts (-1,-4),(1,0),(-3,0)	Zeros x=0, 0.5, 3
4	F-IF.3.7	Parabola with pts (2,4), (0,0), (4, 0)	See graph			Parabola with pts (1,6), (-2,0), (3, 0)
5	F-IF.3.8	C	$f(x) = \left(x + \frac{5}{2}\right)^2 - \frac{33}{4}$	$\left(-\frac{5}{2}, -\frac{33}{4}\right)$	$y = \frac{2}{3}x + \frac{1}{3}$	(18,0), width

Week 10 – Algebra 1						
	Standard	Day 1	Day 2	Day 3	Day 4	Day 5
1	F-IF.3.7	C	C	See graph	Parabola with pts (0,-5),(2,-1),(-2,-1)	see graph
2	A-REI.3.6	B	g=6, b=14	x = 8	C	B
3	A-REI.4.12	E, F	See graph	A	See graph	$y \geq -x + 1$
4	F-LE.1.2	$N(t) = 150(3)^t$	64	Greater/less		C
5	A-SSE.2.3	$\frac{3}{2}, -\frac{25}{2}$	4, -1	B	D	A