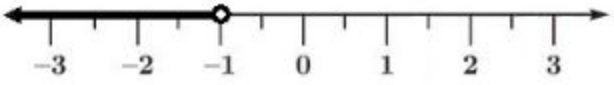
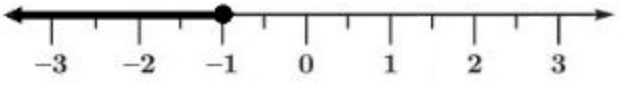
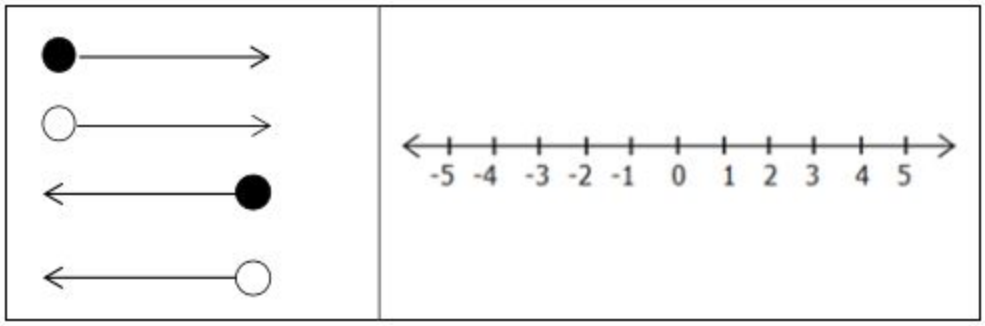
Name _____ Period _____ Date _____

Expressions & Equations

1	**Example Stem:** Select **all** expressions equivalent to $2.3 \bullet (1\frac{1}{8} + 0.125) - 9$. A. $2.3 \bullet (1.25) - 9$ B. $9 - 2.3 \bullet (1.125 + \frac{1}{8})$ C. $-9 + 2.3 \bullet (1.125 + \frac{1}{8})$ D. $2.3 \bullet (9 - 1.25)$	A and C
2	**Example Stem 1:** Enter the value of $2\frac{1}{4} \bullet (4 + 12)$.	36
3	**Example Stem 2:** What is the mean of -15, -12, 8, and 9?	-2.5
4	**Example Stem:** Javier's fuel tank holds $12\frac{3}{4}$ gallons of gasoline when completely full. He had some gas in the tank and added 10.3 gallons of gasoline to fill it completely. How many gallons of gasoline were in the tank before Javier added some?	2.45
5	**Example Stem 1:** A coach buys a uniform and a basketball for each of the 15 players on the team. Each basketball costs $9.40. The coach spends a total of $420 for uniforms and basketballs. Enter an equation that models the situation with *u*, the cost of one uniform.	15u+15 •9.4 = 420

SBAC Math 7 ANSWERS Expressions & Equations: Practice A

Name _____ Period _____ Date _____

6	**Example Stem 2:** A coach buys a uniform and a basketball for each of the 15 players on the team. Each basketball costs $9. The coach spends a total of $420 for uniforms and basketballs. Enter the cost, in dollars, of 1 uniform.	19
7	**Example Stem:** Linda has $26. She wants to buy a ski pass for $80. She can earn $6 per hour to babysit. Enter an inequality that represents the number of hours (*h*) Linda could babysit to earn at least enough money to buy the ski pass.	$6h + 26 \geq 80$
8	**Example Stem:** Which number line shows the solution to the inequality $-3x - 5 < -2$? A.  B.  C.  D.  	A
9	**Example Stem:** Drag the correct arrow to the number line to represent the solution of the inequality $3x + 7 > 13$.  	graph

Test Writers Guidelines Zip File
Expressions and Equations B

EE: Practice A

SBAC Math 7 ANSWERS Expressions & Equations: Practice A

Name _____ Period _____ Date _____

10 Claim 2	**Example Item 2A.1.f (Grade 7):** Primary Target 2A (Content Domain EE), Secondary Target 1C (CCSS 7.RP.A), Tertiary Target 2D Justin's car can travel 77.5 miles using 3.1 gallons of gas. At this rate, how far, in miles, can Justin travel using 8.2 gallons of gas? Enter the distance in the response box.	205
11 Claim 2	Grades 6-8, Claim 2 **Example Item 2A.3b (Grade 7):** Primary Target 2A (Content Domain EE), Secondary Target 1D (CCSS 7.EE.B), Tertiary Target 2D The marching band has 85 members. There are 15 more girls than boys in the band. How many boys are in the marching band? Enter your answer in the response box.	35
12 Claim 2	**Example Item 2C.2a (Grade 7):** Primary Target 2C (Content Domain EE), Secondary Target 1D (CCSS 7.EE.B), Tertiary Target 2D (Source: Adapted from *Illustrative Mathematics*, Grade 7.EE) The students in Mr. Sanchez's class are converting distances measured in miles (m) to kilometers (km). Abby and Renato use the following methods to convert miles to kilometers. • Abby takes the number of miles, doubles it, and then subtracts 20% of the result. • Renato first divides the number of miles by 5, then multiplies the result by 8. Which equation correctly shows why both their methods produce the same result? A. $2m - 0.20 = \frac{m}{5} \cdot 8$ B. $2m - 0.20(2m) = \frac{m}{5} \cdot 8$ C. $2m - 2.20m = \frac{m}{5} + 8\left(\frac{m}{5}\right)$ D. $0.20(2m) - 2m = \frac{m}{5} + 8\left(\frac{m}{5}\right)$	B
13 Claim 2	Grades 6-8, Claim 2 **Example Item 2C.2b (Grade 7):** Primary Target 2C (Content Domain EE), Secondary Target 1C (CCSS 7.EE.B), Tertiary Target 2D A mail-order company sells jars of spices. • An empty jar has a mass of 200 grams. • A full jar contains 110 grams of a spice. • The company sells *n* jars filled with spices. Select the best interpretation of the expression (200 +110)*n*. A. The cost to ship 1 full jar B. The cost to ship *n* full jars C. The mass of 1 full jar D. The mass of *n* full jars	D

Test Writers Guidelines Zip File
Expressions and Equations B

EE: Practice A

SBAC Math 7 ANSWERS Expressions & Equations: Practice A

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14 Claim 3	**Example Item 3B.3b (Grade 7)** Primary Target 3B (Content Domain EE), Secondary Target 1D (7.EE.B), Tertiary Target 3C In February, the price of a gallon of gasoline increased by 23% from the price in January. In March, the price decreased by 11% from the price in February. In March, gas cost $2.63 per gallon. How much did a gallon of gasoline cost in January, in dollars? Round your answer to the nearest cent. Enter your answer in the response box. Which equation shown can be solved to find x, the cost of gas in January? A. $(0.11)(0.23)x = 2.63$ B. $(1.11)(1.23)x = 2.63$ C. $(0.89)(1.23)x = 2.63$ D. $(1.11)(0.77)x = 2.63$	2.40 C
15 Claim 4	**Example Item 4F.1a (Grade 7)** Primary Target 4E (Content Domain EE), Secondary Target 1F (CCSS 6.EE.B), Tertiary Target 4F, Quaternary Target 4D Megan has $2500. She spends money on the following: • $800 on rent • $400 on food • $200 on utility services • $250 on loan payments • $$x$ on other expenses Let y represent the amount of money in dollars Megan has left. Write an equation that represents the relationship between the amount of money Megan spends on other expenses and the amount of money Megan has left.	y=850-x

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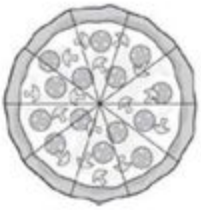
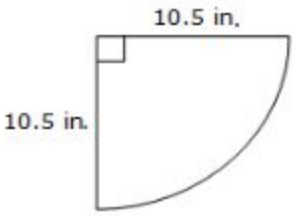
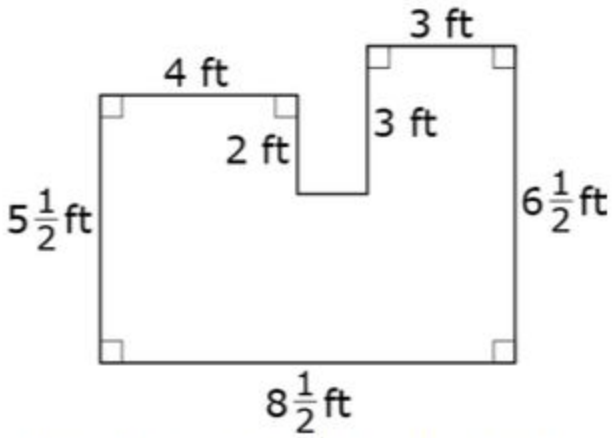
GEOMETRY: AREA AND VOLUME A

1	**Example Stem:** The radius of a circle is 7.5 centimeters. Enter the area of the circle, in square centimeters. Round your answer to the nearest hundredth.	176.71
2	**Example Stem 1:** A circular table top has a radius of 3 feet. Enter the area, in square feet, of the table top. Round your answer to the nearest tenth.	28.27
3	**Example Stem 2:** Jill buys two circular pizzas. The small pizza has an 8-inch diameter.  The medium pizza has a 12-inch diameter.  How much greater, in square inches, is the area of the medium pizza than the small pizza? Round your answer to the nearest tenth.	62.8
4	**Example Stem:** The radius of a circle is 7 centimeters. Enter the circumference of the circle, in centimeters. Round your answer to the nearest hundredth.	43.98
5	**Example Stem:** The circumference of a circle is 31.4 inches. Enter the radius of the circle, in inches. Round your answer to the nearest whole number.	5

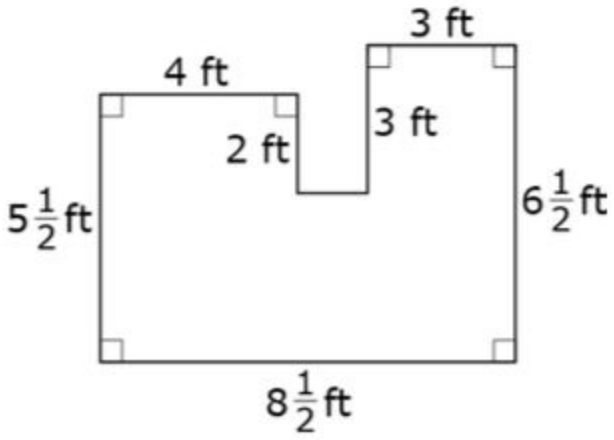
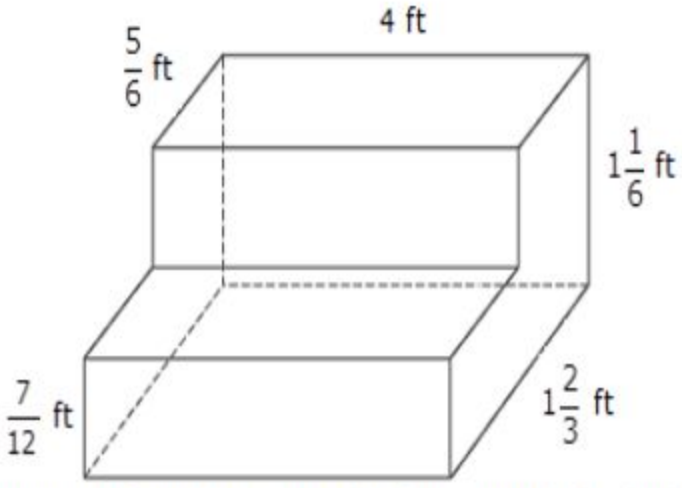
SBAC MATH 7 ANSWERS Area and Volume Practice A

Name _____ Period _____ Date _____

6	**Example Stem 1:** A corner shelf has a radius of 10.5 inches and represents $\frac{1}{4}$ of a circle, as shown.  Enter the area of the shelf, in square inches. Round your answer to the nearest hundredth.	86.59
7	**Example Stem 2:** The circumference of the circle is approximately 100.48 centimeters. The shaded region is $\frac{3}{10}$ of the whole circle.  Enter the area of the shaded region, in square centimeters. Round your answer to the nearest hundredth.	241
8	**Example Stem 1:** This is the floor plan of Julie's bathroom. Julie needs to determine the area of the floor so she can order new tile.  Enter the area, in square feet, of Julie's bathroom floor.	46 ¾

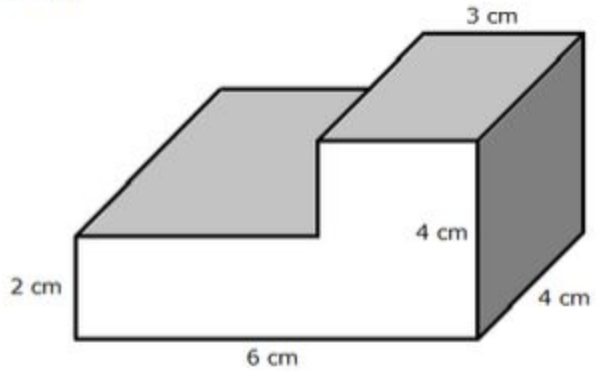
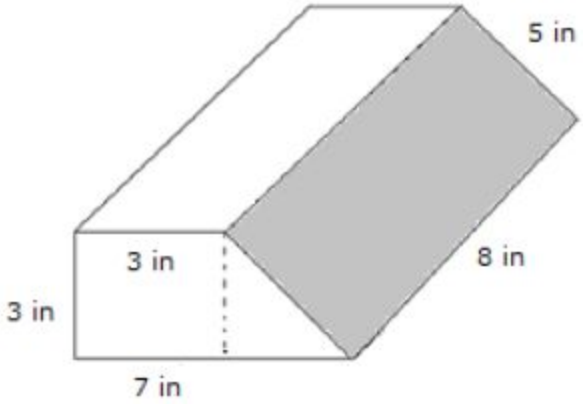
SBAC MATH 7 ANSWERS Area and Volume Practice A

Name _____ Period _____ Date _____

9	**Example Stem 2:** The figure shown is created by joining three rectangles.  Enter the area of the figure, in square centimeters. Round to the nearest hundredth.	46.75
10	**Example Stem 1:** The figure shows a set of concrete stairs to be built.  Enter the amount of concrete, in cubic feet, needed to build the stairs. Round your answer to the nearest hundredth.	5.82

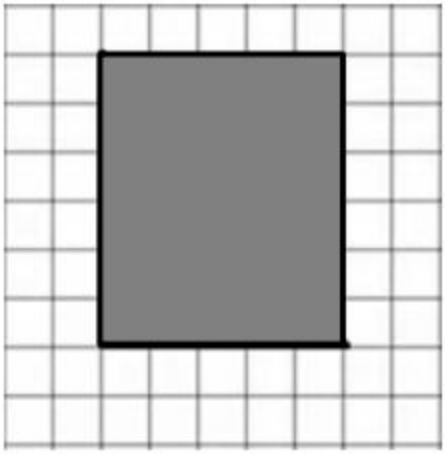
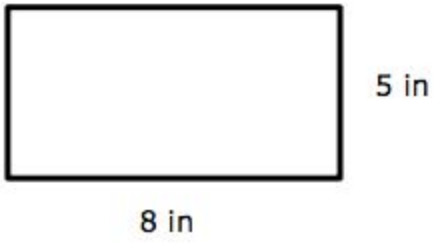
SBAC MATH 7 ANSWERS Area and Volume Practice A

Name _____ Period _____ Date _____

11	**Example Stem 2:** The figure shown is created by joining two right rectangular prisms.  Enter the volume of the figure, in cubic centimeters.	72
12	**Example Stem 3:** The figure shows the dimensions for a package to be shipped.  Enter the minimum amount of wrapping paper, in square inches, needed to cover the package. Round your answer to the nearest whole inch.	174

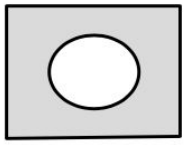
SBAC MATH 7 ANSWERS Area and Volume Practice A

Name _____ Period _____ Date _____

13	**Example Stem:** This diagram of a rectangular city park was drawn using a scale factor of 1 centimeter to 20 meters.  In the diagram shown, assume each square on the grid is 1 centimeter in length. What is the area, in square meters, of the actual park on which this scale drawing is based?	12000
14	**Example Stem:** This scale drawing of a rectangular rug has dimensions 8 inches by 5 inches. The length of the longer side of the actual rug is 32 feet.  Enter the area, in square feet, of the actual rug.	640

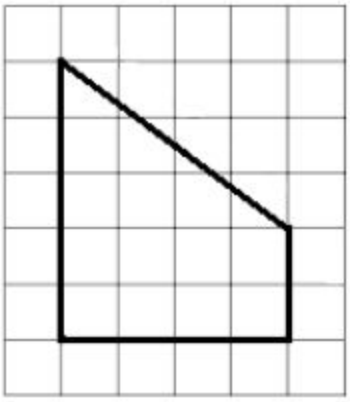
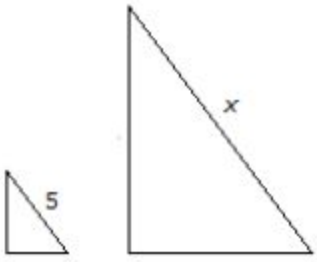
SBAC Math 7 ANSWERS Area and Volume Practice A

Name _____ Period _____ Date _____

15 Claim 2	**Example Item 3C.1b (Grade 7)** Primary Target 3C (Content Domain G), Secondary Target 1F (CCSS 7.G.B), Tertiary Target 3G Glenn saw the figure below and said, "If I find the length (l), width (w), and radius (r), then the area (A) of the shaded region is $A = l \cdot w - \pi r^2$."  Which assumptions must Glenn be making in order for his equation to give the correct area of the shaded region? Select **all** that apply. A. The quadrilateral is a rhombus. B. The quadrilateral is a rectangle. C. The curved figure in the center is a circle. D. The curved figure in the center is a sphere.	B and C

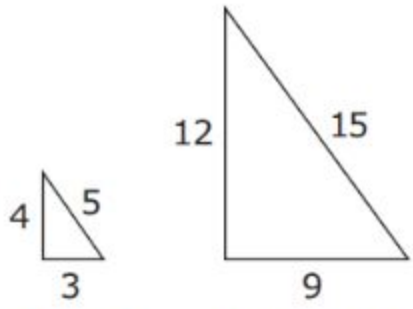
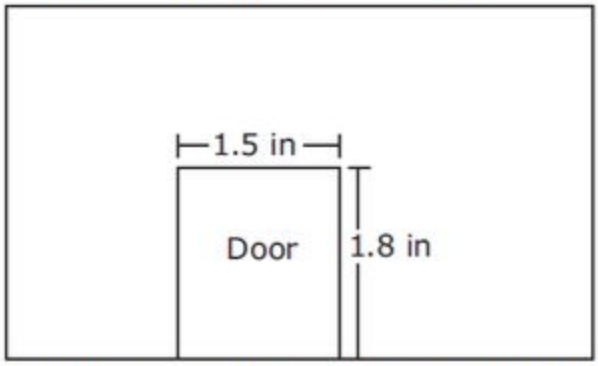
Name _____ Period _____ Date _____

GEOMETRY: CONSTRUCTIONS A

1	**Example Stem:** This figure is a scale drawing of a garden. Create another scale drawing of this figure where all side lengths are twice as long. Use the Connect Line tool to draw the resulting figure.  **Interaction:** The student is given the Connect Line, Add Point, and Delete tools to draw the polygon on a grid.	answer
2	**Example Stem:** Figure A is a scale image of Figure B, as shown.  Figure A Figure B The scale that maps Figure A onto Figure B is $1:3\frac{1}{2}$. Enter the value of x.	17.5

SBAC Math 7 ANSWERS Constructions Practice A

Name _____ Period _____ Date _____

3	**Example Stem:** Figure B is a scale image of Figure A, as shown.  **Figure A** **Figure B** Enter the scale factor applied to Figure A to produce Figure B.	3
4	**Example Stem:** The front side of a playhouse is shown in this scale drawing. The height of the door in the drawing is 1.8 inches. The scale that maps the drawing to the actual playhouse is 1 inch to 2.5 feet. **Scale Drawing of the Playhouse**  Using the scale given, enter the actual height, in feet, of the playhouse door.	4.5
5	**Example Stem:** Use the Connect Line tool to draw a triangle with a 90° angle, a side with a length of 7 units, and a side with a length of 4 units. Each square on the grid is 1 unit in length.	answers

SBAC Math 7 ANSWERS Constructions Practice A

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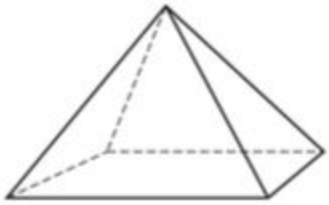
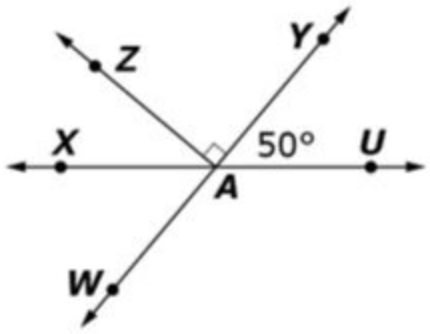
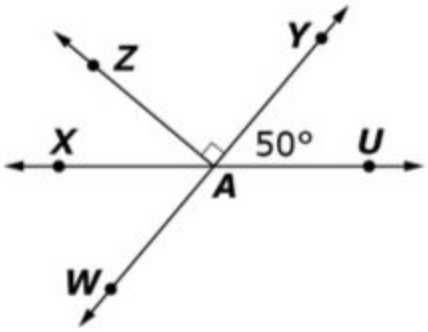
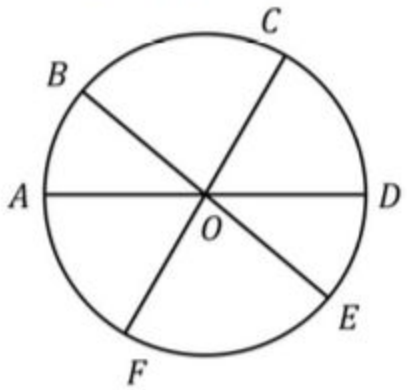
6	**Example Stem:** This figure is a square pyramid.  Select **all** figures that can be formed by a vertical slice perpendicular to the base of the square pyramid. A. Isosceles Trapezoid B. Line segment C. Square D. Triangle	A, B and D
7	**Example Stem:** Lines *XU* and *WY* intersect at point *A*.  Based on the diagram, determine whether each statement is true. Select True or False for each statement. **Statement** / **True** / **False** An angle supplementary to ∠*WAU* measures 50°. An angle complementary to ∠*WAX* measures 40°. The angle vertical to ∠*YAU* measures 50°.	T T T

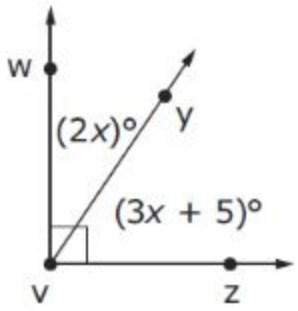
SBAC Math 7 ANSWERS Constructions Practice A

Name _____ Period _____ Date _____

8	**Example Stem:** Lines *XU* and *WY* intersect at point *A*.  Based on the diagram, determine whether each statement is true. Select True or False for each statement. **Statement** / **True** / **False** m∠*XAZ* = 180° − m∠*ZAY* − m∠*YAU* / / m∠*WAZ* = m∠*WAY* − m∠*ZAY* / / m∠*WAU* = m∠*XAZ* − m∠*ZAY* / /	T T F
9	$\overline{AD}$, $\overline{BE}$, $\overline{CF}$ are all diameters of the circle shown. • m∠*AOB*=40° • m∠*COE*=100°  What is the measure of ∠*BOC*?	80

SBAC Math 7 ANSWERS Constructions Practice A

Name _____ Period _____ Date _____

10	**Example Stem:** Consider this figure.  Enter the measure of ∠*YVZ*, in degrees.	56

Name _____ Period _____ Date _____

NUMBER SYSTEMS: EXPRESSIONS A

1	**Example Stem 1:** Select the expression equivalent to $(3x + 2) + (-6x + 3)$. A. $-3x + 5$ B. $3x + 5$ C. $9x + 5$ D. $-9x + 5$	A
2	**Example Stem 2:** Select the expression equivalent to $(2.1x + 4.3) - (-3x - 7)$. A. $-0.9x - 2.7$ B. $-0.9x + 11.3$ C. $5.1x - 2.7$ D. $5.1x + 11.3$	D
3	**Example Stem 1:** Enter the value of n so that the expression $(-y + 5) + (7y - 9)$ is equivalent to $(ny - 4)$.	6
4	**Example Stem 2:** Enter the value of n so that the expression $(-y + 5.3) + (7.2y - 9)$ is equivalent to $6.2y + n$.	3.7
5	**Example Stem:** Select **all** expressions equivalent to $-72x + 60$. A. $-12(6x - 5)$ B. $-12(-6x - 5)$ C. $6(-12x + 10)$ D. $-6(-12x - 10)$	A and C

SBAC Math 7 ANSWERS Number Systems: Expressions Practice A

Name _____ Period _____ Date _____

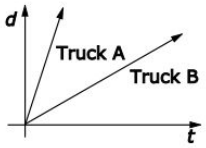
6	**Example Stem 1:** Enter the value of p so that the expression $3(n + 5)$ is equivalent to $(n + p)3$.	5
7	**Example Stem 2:** Enter the value of p so that the expression $\frac{5}{6} - \frac{1}{3}n$ is equivalent to $p(5 - 2n)$.	⅙
8	**Example Stem 1**: Which expression is equivalent to $-15x + 6$? A. $-3(5x - 2)$ B. $-3(5x + 6)$ C. $3(-5x - 2)$ D. $3(5x + 6)$	A
9	**Example Stem 2**: Which expression is equivalent to $-0.8(10.8x - 20 + 3.2x)$? A. $-11.2x + 16$ B. $-11.2x - 16$ C. $-8.64x - 16.8$ D. $-8.64x + 16.8$	A
10	**Example Stem:** Enter the value of b when the expression $14.1x + b$ is equivalent to $4.7(3x - 3.5)$.	-16.45
11	**Example Stem 1**: Select **all** expressions that are equivalent to $3x + 5(-4x + 12) - (x - 3)$. A. $-18x + 63$ B. $18x - 63$ C. $3x - 20x + 60 - x + 3$ D. $3x + 20x + 60 - x - 3$	A and C
12	**Example Stem 2**: Select **all** expressions that are equivalent to $0.75x + 0.25(x + 12.4) + (x - 2.1)$. A. $2x + 1$ B. $x + 1$ C. $x + 3.1 + x + 2.1$ D. $x + 3.1 + x - 2.1$	A and D

Test Writers Guidelines Zip File
Number Systems C

NS: Expressions A

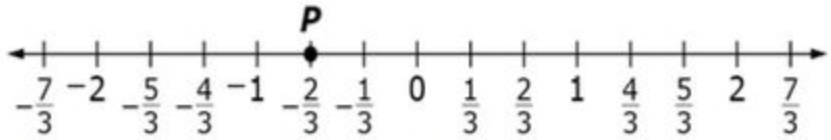
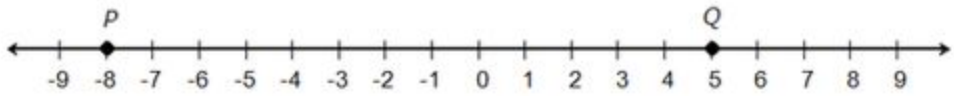
SBAC Math 7 ANSWERS Number Systems: Expressions Practice A

Name _____ Period _____ Date _____

13 Claim 3	**Example Item 3F.1b (Grade 7)** Primary Target 3F (Content Domain NS), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 3D Two trucks are traveling on a highway at a constant speed. The graphs of their distances, *d*, over time, *t*, are shown.  Which truck is traveling faster, and how do you know? Truck [drop-down menu choices: A, B] is traveling faster because the graph is [drop-down menu choices: steeper, less steep, longer, shorter].	Truck A Steeper
14 Claim 4	**Example Item 4A1.b (Grade 7)** Primary Target 4A (Content Domain NS), Secondary Target 1B (CCSS 6.NS.A), Tertiary Target 4B, Quaternary Target 4D [Adapted from Illustrative Mathematics task 50] Alice, Raul, and Maria are baking cookies together. They need $\frac{3}{4}$ cup of flour and $\frac{1}{3}$ cup of butter to make one batch of cookies. They each brought the ingredients they had at home. • Alice brought 2 cups of flour and $\frac{1}{4}$ cup of butter • Raul brought 1 cup of flour and $\frac{1}{2}$ cup of butter • Maria brought $1\frac{1}{4}$ cups of flour and $\frac{3}{4}$ cups of butter. Assume the students have plenty of the other ingredients (sugar, salt, baking soda, etc.) they need to make the cookies. What is the maximum number of whole batches of cookies they can make with the ingredients they brought from home? Enter your answer in the second response box.	Answers vary depends on the recipe

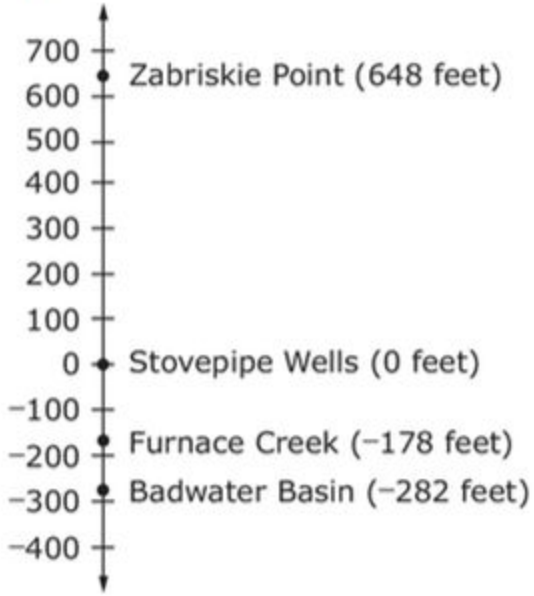
Name _____ Period _____ Date _____

NUMBER SYSTEMS: RATIONAL NUMBERS A

1	**Example Stem:** What numbers are located exactly $\frac{5}{3}$ units from point *P* on the number line? Use the Add Point tool to plot the location of these numbers on the number line.  **Interaction:** Add Point and Delete tools should be provided for students to plot points on the number line containing snap-to regions at every tick mark.	graph
2	**Example Stem:** Select **all** expressions that show the distance between *P* and *Q*.  A. 5 − (−8) B. 5 + |−8| C. |−8 + 5| D. 5 + (−8)	A and B

SBAC Math 7 ANSWERS Number systems: Rational Numbers Practice A

Name _____ Period _____ Date _____

3	**Example Stem:** Select **all** expressions that equal -7 – (-12). A. 7+ (-12) B. -7 + (-12) C. -7 + 12 D. 7+12	B and C
4	**Example Stem:** The number line shows four elevations in Death Valley National Park.  Enter the difference, in feet, between the elevation at Zabriskie Point and Furnace Creek.	826
5	**Example Stem 1:** Enter the value of 14 + (-22) – 14 – 22.	-44
6	**Example Stem 2:** Enter the value of 2.1 + (-3) – (-0.9).	0

SBAC Math 7 ANSWERS Number systems: Rational Numbers Practice A

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7	**Example Stem:** Select **all** values equal to $-\frac{4}{5}$. A. $\frac{-4}{-5}$ B. $-\frac{-4}{-5}$ C. $\frac{-4}{5}$ D. $-\frac{-4}{5}$ E. $\frac{4}{-5}$	B, C and E
8	**Example Stem 1:** Enter the value of $\frac{1}{2}(1.7)$.	0.85
9	**Example Stem 2:** Enter the value of $(-8)(45)(\frac{1}{8})$.	-45
10	**Example Stem 3:** Enter the value of $(0.01)(-0.1)(10)(-100)$.	1
11	**Example Stem 4:** Enter the value of $(0.45) \div \frac{9}{10}$.	0.5
12	**Example Stem:** If a bank represents deposits with positive numbers and withdrawals as negative numbers, what could $5 \bullet (-20)$ represent? A. Five deposits of $20. B. Five withdrawals of $20. C. A $5 deposit followed by a $20 withdrawal D. A $5 withdrawal followed by a $20 deposit	B
13	**Example Stem:** Enter the decimal equivalent of $\frac{5}{8}$.	.625
14	**Example Stem:** Enter the value of $\frac{3}{8}\left[-8+16-(-2\frac{1}{2})\right]$.	3.9375 or $3\ \frac{15}{16}$

SBAC Math 7 ANSWERS Number systems: Rational Numbers Practice A

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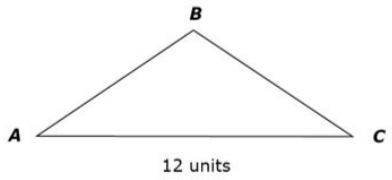
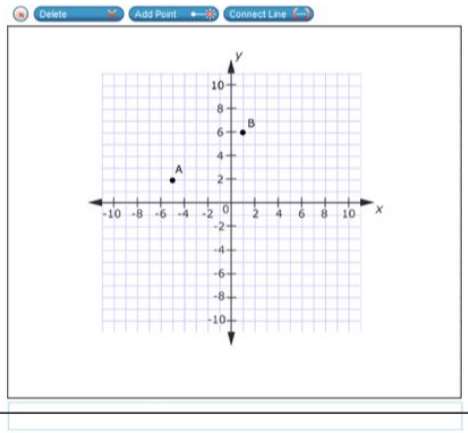
15	**Example Stem:** Mark buys a wooden board that is $7\frac{1}{2}$ feet long. The cost of the board is $0.50 per foot, including tax. What is the total cost, in dollars, of Mark's board?	3.75
16 CLAIM 2	**Example Item 2A.2e (Grade 7)** Primary Target 2A (Content Domain NS), Secondary Target 1D (CCSS 6.NS.C)  Complete the sketch of triangle ABC in the coordinate plane. • Point A is plotted at (-5, 2) • Point B is plotted at (1, 6) • Side AC is parallel to the *x*-axis and is 12 units long Use the Add Point and Connect Line Tool to plot C in the coordinate plane and connect the three points. 	graph
17 CLAIM 2	**Example Item 2A.2f (Grade 7):** Primary Target 2A (Content Domain NS), Secondary Target 1B (CCSS 7.NS.A), Tertiary Target 2C The weather report predicted that the low temperature would be -8 degrees Fahrenheit. The radio announcer said, "The low temperature was 5 degrees colder than predicted!" What was the low temperature, in degrees Fahrenheit? Enter your answer in the response box.	-13
18 CLAIM 2	Grades 6-8, Claim 2 **Example Item 2B.2b (Grade 7)** Primary Target 2B (Content Domain NS), Secondary Target 1B (CCSS 7.NS.A) Determine whether each expression has a value that is positive, negative, or zero. Select the correct comparison for each expression. See table below	answer

Expression	Positive	Zero	Negative
$\left(1\frac{2}{3}\right)+\left(-\frac{4}{3}\right)$			
$\frac{23}{56}-0.42$			
$(-0.025)\cdot\left(\frac{9}{16}\right)$			
$\left(-\frac{21}{5}\right)\div\left(-\frac{21}{5}\right)$			

Test Writers Guidelines Zip File
Number Systems B

G: Pythagorean Theorem A

SBAC MATH 7 ANSWERS Number systems: Rational Numbers Practice A

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19 CLAIM 2	**Example Item 2C.1b (Grade 7)** Primary Target 2C (Content Domain NS), Secondary Target 1B (CCSS 7.NS.A) This table shows the monthly change in Sara's bank account balance for each month listed. For example, the account balance change of -30 means that Sara's balance decreased by $30 from the beginning to the end of the month of February. **Month** / **Account Balance Change (Dollars)** January: +38 February: −30 March: −19 April: +49 Determine whether each statement about Sara's bank account balance is true or false, based on the information in the table. Select True or False for each statement. **Statement** / **True** / **False** Sara has less money in her account at the end of February than at the end of any other month. Sara's account balance is the same at the end of April as it is at the end of January. Sara has more money in her account at the end of April than she had at the **beginning** of January.	F T T
20 CLAIM 3	**Example Item 3C.2a (Grade 7)** Primary Target 3C (Content Domain NS), Secondary Target 1B (CCSS 7.NS.A), Tertiary Target 3C A **perfect square** is a number s that is the product of an integer, n, and itself, so that $s = n^2$. Examples of perfect squares include 25 because it is equal to 5^2 and 81 because it is equal 9^2. Can a perfect square be negative? A. Yes; an example is −25. B. No; a square of any integer is always positive. C. Sometimes Yes, sometimes No; it depends on the value of n. D. There is not enough information to tell.	B
21 CLAIM 3	**Example Item 3D.2a (Grade 7)** Primary Target 3D (Content Domain NS), Secondary Target 1B (CCSS 7.NS.A), Tertiary Target 3C Given x and y are rational numbers, when is $\|x + y\| = \|x\| + \|y\|$ true? A. This is never true. B. This is always true. C. This is true when x and y have opposite signs. D. This is true when x and y have the same sign.	D

SBAC Math 7 ANSWERS Number systems: Rational Numbers Practice A

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22 Claim 3	**Example Item 3E.2a (Grade 7)** Primary Target 3E (Content Domain NS), Secondary Target 1B (CCSS 6.NS.A), Tertiary Target 3C Clyde and Lily were solve the equation $\frac{8}{9} \div \frac{1}{2} = x$. **Clyde said, "I can think of this division problem as a multiplication problem." Then he wrote:** Step 1. $\frac{8}{9} \div \frac{1}{2} = x$ Step 2. $\frac{1}{2}x = \frac{8}{9}$ Step 3. $2\left(\frac{1}{2}x\right) = 2\left(\frac{8}{9}\right)$ Step 4. $x = \frac{16}{9}$ **Lily said, "You need to invert and multiply." Then she wrote:** Step 1. $\frac{8}{9} \div \frac{1}{2} = x$ Step 2. $\frac{8}{9} = 2 \cdot x$ Step 3. $\frac{1}{2}(2x) = \left(\frac{1}{2}\right) \cdot \left(\frac{8}{9}\right)$ Step 4. $x = \frac{8}{18}$ Who solved the problem correctly? A. Only Clyde solved the equation correctly. B. Only Lily solved the equation correctly. C. They both solved the equation correctly. D. Neither one solved the equation correctly.	A
23 Claim 3	**Example Item 3F.1a (Grade 7)** Primary Target 3F (Content Domain NS), Secondary Target 1D (CCSS 6.NS.C), Tertiary Target 3D P and T are numbers and $P + T = 0$. Select **all** of the statements about P and Q that could be true. A. $P = 0$ and $T = 0$ B. $P = 0$ or $T = 0$, but not both. C. P can be any positive number and T can be any negative number. D. P and T are on opposite sides of zero and equally distant from zero on the number line.	A D

Test Writers Guidelines Zip File
Number Systems B

G: Pythagorean Theorem A

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RATIOS AND PROPORTIONS A

1	**Example Stem:** David uses $\frac{1}{4}$ cup of apple juice for every $\frac{1}{2}$ cup of carrot juice to make a fruit drink. Enter the number of cups of apple juice David uses for 1 cup of carrot juice.	1/2
2	**Example Stem 1:** This table shows a proportional relationship between the number of cups of sugar and flour used for a recipe. **Cups of Sugar** / **Cups of Flour** 2 / 5 6 / 15 8 / 20 Enter the number of cups of sugar used for 1 cup of flour.	2/5
3	**Example Stem 2:** This table shows a proportional relationship between the number of cups of sugar and flour used for a recipe. **Cups of Sugar** / **Cups of Flour** $2\frac{1}{2}$ / $7\frac{1}{2}$ $3\frac{3}{4}$ / $11\frac{1}{4}$ Enter the number of cups of sugar used for 1 cup of flour.	1/3

SBAC Math 7 ANSWERS Ratios and Proportions: Practice A

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<table>
<tr>
<td>4</td>
<td>Example Stem 1: A drink recipe calls for papaya juice and carrot juice. This equation represents the proportional relationship between the number of quarts of papaya juice (p) and carrot juice (c) in the recipe.

$2p = 8c$

Enter the number of quarts of papaya juice used for 1 quart of carrot juice.</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Example Stem 2: A drink recipe calls for papaya juice and carrot juice. This equation represents the proportional relationship between the number of quarts of papaya juice (p) and carrot juice (c) in the recipe.

$(1\frac{1}{3})p = (3\frac{1}{3})c$

Enter the number of quarts of papaya juice used for 1 quart of carrot juice.</td>
<td>5/2</td>
</tr>
<tr>
<td>6</td>
<td>Example Stem 1: Select all tables that represent a proportional relationship between x and y.

A.
<table>
<tr><td>x</td><td>0</td><td>1</td><td>2</td><td>3</td></tr>
<tr><td>y</td><td>0</td><td>2</td><td>4</td><td>6</td></tr>
</table>
B.
<table>
<tr><td>x</td><td>0</td><td>2</td><td>4</td><td>6</td></tr>
<tr><td>y</td><td>0</td><td>4</td><td>16</td><td>36</td></tr>
</table>
C.
<table>
<tr><td>x</td><td>0</td><td>3</td><td>6</td><td>9</td></tr>
<tr><td>y</td><td>0</td><td>15</td><td>30</td><td>45</td></tr>
</table>
D.
<table>
<tr><td>x</td><td>0</td><td>4</td><td>6</td><td>8</td></tr>
<tr><td>y</td><td>0</td><td>16</td><td>36</td><td>64</td></tr>
</table>
</td>
<td>A and C</td>
</tr>
</table>

SBAC Math 7 ANSWERS Ratios and Proportions: Practice A

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7	**Example Stem 2**: Select **all** tables that represent a proportional relationship between x and y. A. x 0 1 2 3 y 0 2 4 6 B. x 0 2 4 6 y 0 4 16 36 C. x 0 $\frac{1}{9}$ $\frac{1}{4}$ $\frac{1}{2}$ y 0 $\frac{1}{81}$ $\frac{1}{16}$ $\frac{1}{4}$ D. x 0 $\frac{1}{3}$ $\frac{2}{3}$ $\frac{3}{3}$ y 0 $\frac{1}{9}$ $\frac{2}{9}$ $\frac{3}{9}$	A and D

SBAC Math 7 ANSWERS Ratios and Proportions: Practice A

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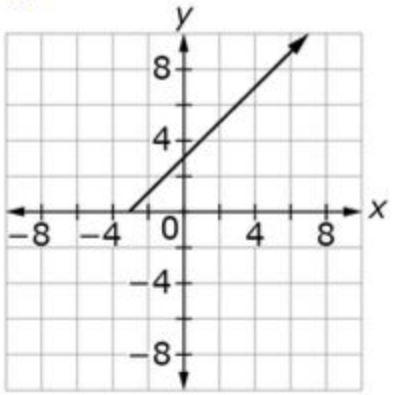
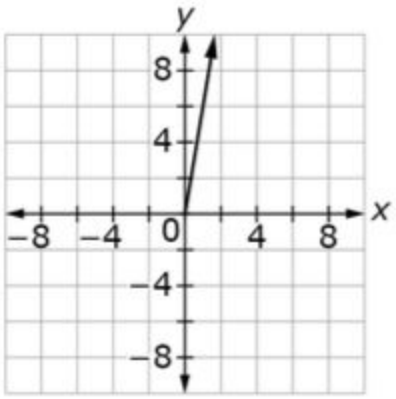
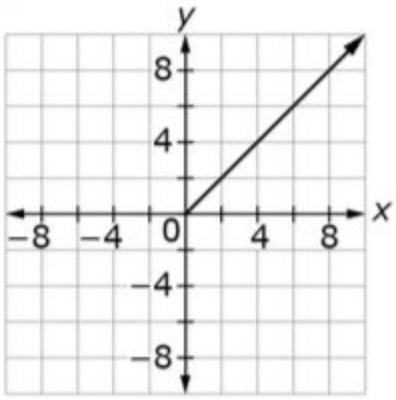
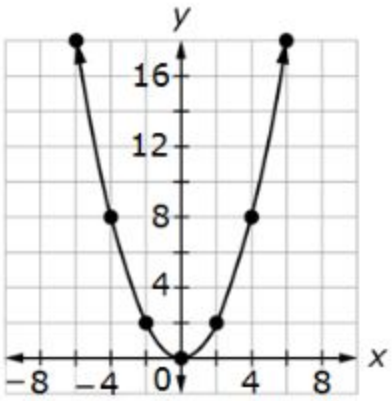
8	**Example Stem:** Select **all** the graphs that represent a proportional relationship between x and y. A)  C)  B)  D)  	B and C

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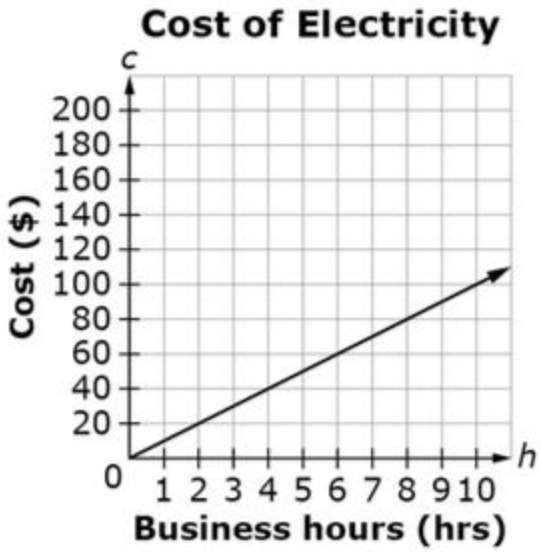
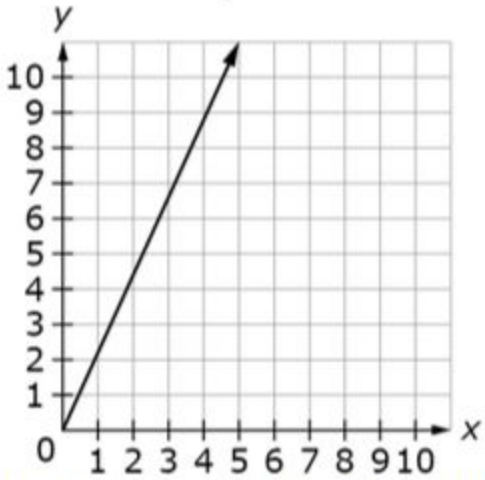
9	**Example Stem 1:** This graph shows the relationship between the number of hours (h) a business operates and the total cost of electricity (c).  Find the constant of proportionality (r) for this relationship. Using the value for k, enter an equation in the form of $c = rh$ that represents the relationship between the number of hours (h) and the total cost (c).	C=10h
10	**Example Stem 2:** This graph shows a proportional relationship between x and y.  Find the constant of proportionality (k). Using the value for k, enter an equation in the form of $y = kx$.	y=2x

SBAC Math 7 ANSWERS Ratios and Proportions: Practice A

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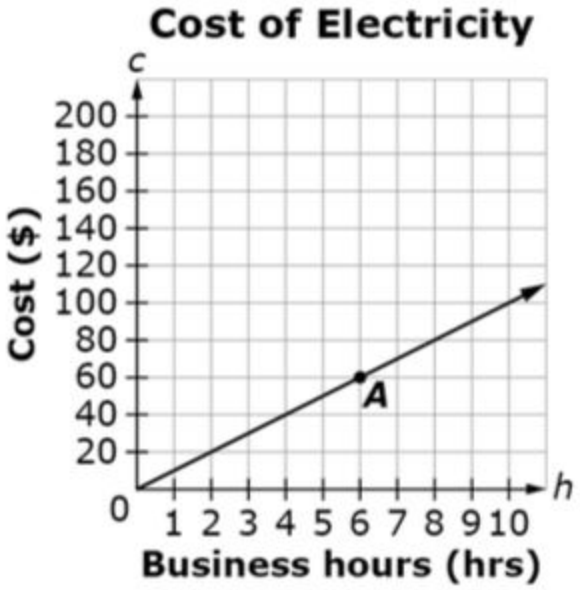
11	**Example Stem 3:** This table shows a proportional relationship between x and y. | x | y | |---|---| | 4 | 48 | | 5 | 60 | | 8 | 96 | Find the constant of proportionality (k). Using the value for k, enter an equation in the form of $y = kx$.	y=12x
12	**Example Stem:** This graph shows the relationship between the number of hours (h) a business operates and the total cost (c) of electricity.  Select True or False for each statement about the graph. | Statement | True | False | |---|---|---| | Point A represents the total cost of electricity when operating the business for 6 hours. | | | | The total cost of electricity is \$8 when operating the business for 80 hours. | | | | The total cost of electricity is \$10 when operating the business for 1 hour. | | |	T F T

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13	**Example Stem 1:** Dave buys a baseball for $15 plus an 8% tax. Mel buys a football for $20 plus an 8% tax. Enter the difference in the amount Dave and Mel paid, including tax. Round your answer to the nearest cent.	5.40
14	**Example Stem 2:** A bicycle is originally priced at $80. The store owner gives a discount and the bicycle is now priced at $60. Enter the percentage discount for the cost of the bicycle.	25
15	**Example Stem 3:** Dave has a 32 ounce energy drink. He drinks 10 ounces. Enter the percentage of ounces Dave has left of his energy drink. Round your answer to the nearest hundredth.	68.75
16 CLAIM 2	**Example Item 2A.1d (Grade 7):** Primary Target 2A (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 2D Luke buys a television that is on sale for 25% off the original price. The original price is $120 more than the sale price. What is the original price of the television?	480
17 CLAIM 2	**Example Item 2A.1e (Grade 7):** Primary Target 2A (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 2D Elly poured $\frac{1}{10}$ gallon of water into an empty bottle. Now it is $\frac{1}{2}$ full. How many **cups** of water does a full bottle hold? • There are 16 cups in one gallon. Enter the total number of **cups** that are in the bottle when it is full.	3 ⅕ or 3.2
18 CLAIM 2	**Example Item 2A.3c (Grade 7):** Primary Target 2A (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 2D The school bus driver follows the same route to pick students up in the morning and to drop them off in the afternoon. Because of traffic, the afternoon drive takes 1.5 times as long as the morning drive. Enter an equation that represents the relationship between the number of minutes x, of the morning drive, to the **total** number of minutes, *y*, that the bus driver spends picking up and dropping off students each day.	y=2.5x

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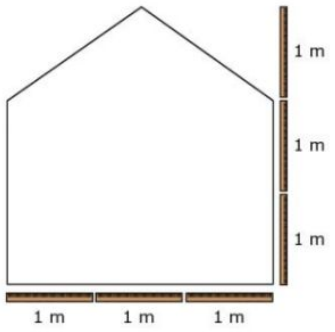
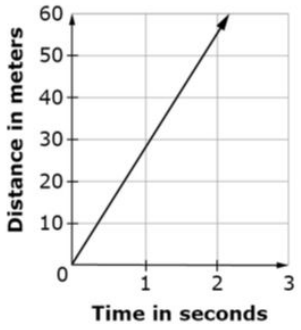
19 Claim 2	**Example Item 2B.1a (Grade 7):** Primary Target 2B (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 2D John needs to paint one wall in his school. He knows that one can of paint covers an area of 24 square feet. John uses a meter stick to measure the dimensions of the wall, as shown. • 1 meter is approximately 39 inches What is the **fewest** number of cans of paint John can use to paint the wall?  	
20 Claim 2	**Example Item 2C.2d (Grade 7):** Primary Target 2A (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 2C, Quaternary Target 2D A car is traveling on the highway. The distance, in meters, it has traveled over a two-second interval is shown in the graph. A crow can fly up to 32 meters per second. Would it be possible for a crow to pass the car? A. Yes, it is possible for a crow to pass the car. B. No, it is not possible for a crow to pass the car. C. The speed of the car and the maximum speed of the crow are too close to tell. D. There is not enough information to answer the question.  	A
21 Claim 3	**Example Item 3B.2b (Grade 7)** Primary Target 3B (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A) A robot moves at a constant speed. It travels *n* miles in *t* minutes. The robot's pace is the number of minutes it takes to travel one mile. ***Part A*** A. What is the robot's speed in miles per minute? B. What is the robot's pace in minutes per mile? ***Part B*** If the robot's speed is greater than 1, then the pace is A. Greater than 1. B. Equal to 1. C. Less than 1. D. Cannot be determined. Explain your reasoning.	answer

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22 Claim 4	**Example Item 4C.2a (Grade 7)** Primary Target 4C (Content Domain RP), Secondary Target 1A (CCSS 7.RP.A), Tertiary Target 4F [Adapted from Illustrative Mathematics task 1564.] Chichén Itzá was a Mayan city in what is now Mexico. The picture shows El Castillo, also known as the pyramid of Kukulcán, which is located in the ruins of Chichén Itzá.  The pyramid is approximately 30 meters tall, and there are 91 steps leading up to a temple at the top. What additional information do you need to know to estimate the height above the ground, in meters, of the 50th step? Select **all** that apply. A. Each of the steps has approximately the same height. B. The base of the pyramid is about 55 meters wide. C. The height of the temple is about 6 meters. D. The base of the pyramid is a square.	A and C

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Statistics and Probability: Probability

1	**Example Stem:** A deck of 12 cards labeled 1 through 12 is shuffled. One card is selected at random. Determine whether each statement correctly describes the likelihood of an event based on the given deck of cards. Select True or False for each statement.	T T T F

Statement	True	False
It is impossible that a card with a number greater than 13 is selected.		
It is likely that a card with a number greater than 2 is selected.		
It is certain that a card with an odd or even number is selected.		
It is unlikely that a card with a number less than 7 is selected.		

SBAC Math 7 Answers Statistics & Probability: Probability Practice A

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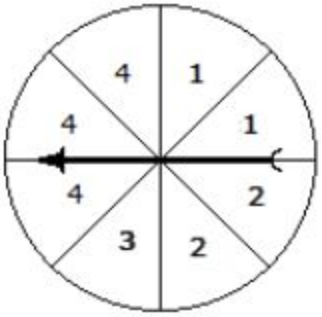
2	**Example Stem:** This table shows outcomes of a spinner with 3 equal sections colored orange, blue, and white. **Section** / **Outcomes** Orange: 30 Blue: 34 White: 36 Based on the outcomes, which number is the **best** prediction for the number of times the arrow is expected to land on the orange section if it is spun 20 times? A. 3 B. 6 C. 30 D. 60	B
3	**Example Stem:** This spinner is divided into 8 equal-sized sections.  Enter the probability of the arrow landing on a section labeled 2 on the first spin.	.25
4	**Example Stem:** This table shows the results of randomly selecting colored marbles from a bag 20 times. **Number of Times Selected**: Red 7; Yellow 4; Blue 3; Orange 1; Purple 0; Green 5 Based on these results, enter the expected probability of selecting a red marble from the bag in one attempt.	.35

SBAC Math 7 Answers Statistics & Probability: Probability Practice A

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5	**Example Stem:** A fair coin is flipped 4 times. It lands facing heads up 3 out of 4 times. The probability of a fair coin landing heads up on one flip is $\frac{1}{2}$. Select the statement that gives the most likely explanation for why the observed frequency is different than the predicted probability. A. The kind of coin used is too heavy. B. The total number of coin flips is small. C. The coin had heads on both sides. D. The probabilities $\frac{3}{4}$ and $\frac{1}{2}$ have different denominators.	B
6	**Example Stem 1:** A fair coin is flipped 3 times. Enter the probability of the coin landing on its head all 3 times.	⅛ or 0.125
7	**Example Stem 2:** Two number cubes, each with faces labeled 1 through 6, are rolled at the same time. Enter the probability that both number cubes land with the number 4 facing up in one roll.	1/36 or 0.027

SBAC Math 7 Answers Statistics & Probability: Probability Practice A

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8

Claim 4

Example Item 4C.1a (Grade 7)
Primary Target 4C (Content Domain SP), Secondary Target 1I (CCSS 7.SP.C), Tertiary Target 4B, Quaternary Target 4D

Ramos flips a coin 100 times and records the results in a table.

Results of 100 Coin Flips

Outcome of Flip	Number of Times
Heads	74
Tails	26

Part A
Select an assumption about the outcome of a single flip of this coin [heads and tails are equally likely; heads are 3 times as likely as tails]

Part B
Based on your assumption, which would be the most likely outcome for the next **2** flips?

A. two heads
B. two tails
C. one head and one tail

Part A
C

Part B
A