

RATIO REPRESENTATIONS (PR1)

Essentials Pre-Assessment **Answer Key**

1. Tiana wants to paint her room orange. In order to make the right color orange, she mixes two parts red with six parts yellow.

a. Create a tape diagram to represent Tiana's orange paint mixture.



b. How many parts of red paint does she need if she wants to make 64 total parts?

16 parts of red paint

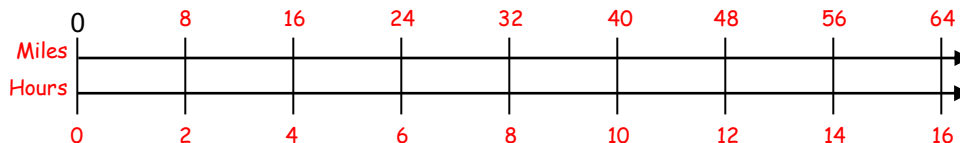
2. Using the table to the right, do the numbers in the rows represent equivalent ratios? _____ Explain.

No; Period 1 and 3 are equivalent, but period 2 is not. Period 2 has a 1:1 ratio. Period 1 and 3 have a ratio of 2:1.

	Number of pencils	Number of rulers
Period 1	58	29
Period 2	27	27
Period 3	74	37

3. Murphy walks 8 miles every 2 hours.

a. Create a double number line to represent this situation.



b. How many miles does he walk per hour?

4 miles

c. At that rate, how many hours will it take Murphy to walk 21 miles?

5.25 hours

4. Buster gets \$60 in allowance every four weeks. He is saving all of his allowance to buy a game system that costs \$360. How many weeks will it take him to save up enough money for the system? Use a table, tape diagram, or double number line to show your reasoning.

24 weeks

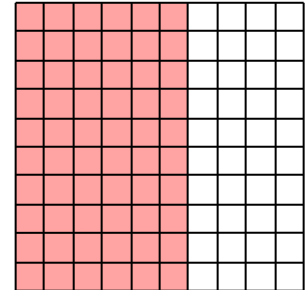
5. Sonia and Carlos are shopping in the grocery store. They see the sign that says "10 pounds of apples for \$4.00." Sonia says that the sign means you can get $2\frac{1}{2}$ pounds of apples for one dollar. Carlos says Sonia is wrong and that the sign means it cost \$0.40 per one pound of apples. Who is correct Sonia, Carlos or both of them? Explain.

Both Sonia and Carlos are correct. Sonia makes a unit rate with pounds per dollar. Carlos makes a unit rate with dollars per pound. But they are equivalent statements.

PERCENTS (PR2)

Essentials Pre-Assessment **Answer Key**

6. The drawing below represents a garden. The shaded part is planted.



- a. What fractional part is planted? $\frac{3}{5}$
- b. Color the hundred-square so that the same fractional part is planted.
Shading will vary; 60 of the 100 squares are shaded.
- c. Write the part that is shaded as a decimal, and percent.
0.6, 60%

7. Complete the table.

	Fraction	Decimal	Percent
a.	$\frac{3}{4}$	<i>0.75</i>	<i>75%</i>
b.	$\frac{4}{5}$	0.8	<i>80%</i>

8. Change $\frac{2}{7}$ to a decimal.

0.285714

9. Choose all amounts that are equal to \$20.

- A. 10% of \$200
 B. 20% of \$10
 C. 50% of \$40
 D. 25% of \$80

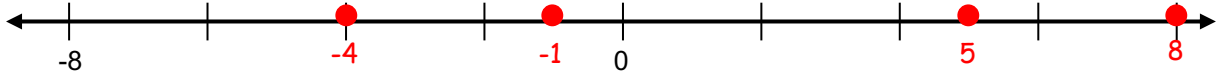
10. Selena is buying a soccer jersey for \$50. Show work.

a. If the jersey is on sale for 20% off, how much would the jersey be before sales tax? <b style="color: red; text-align: center;">\$40	b. If sales tax is 5%, how much would the total cost be with sales tax? <b style="color: red; text-align: center;">\$42
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GRADE 7: INTRODUCTION TO INTEGERS (IN1)

Essentials Pre-Assessment Answer Key

11. Graph and label each of the following numbers on the number line below: 5, -4, -1, 8



Use the number line to the right to help you complete problems 12–14.

12. Choose ALL the statements below that result in a temperature of 20° .

- | | |
|--|---|
| <input checked="" type="radio"/> A. Start at 50° , fall 30° | B. Start at -20° , rise 50° |
| <input checked="" type="radio"/> C. Start at -10° , rise 30° | D. Start at -5° , rise 25° |

13. A freezer is kept at a temperature of -15° F. The electricity went out and 5 hours later the temperature had risen to 55° F. How much did the temperature change? 70°

14. A cooler was -10° F but Frank left the lid open and the temperature rose 25° F. What is the temperature of the cooler now? 15°

15. Write $<$, $=$, or $>$ in the blanks to make each statement true. Then choose one and explain how you know your answer is correct.

- | | |
|--------------------------------|---|
| a. $ -25 $ <u> = </u> $ 25 $ | b. the opposite of 5 <u> < </u> $ -5 $ |
| c. 7 <u> > </u> $- -7 $ | d. $- 15-7 $ <u> < </u> $- -6 $ |

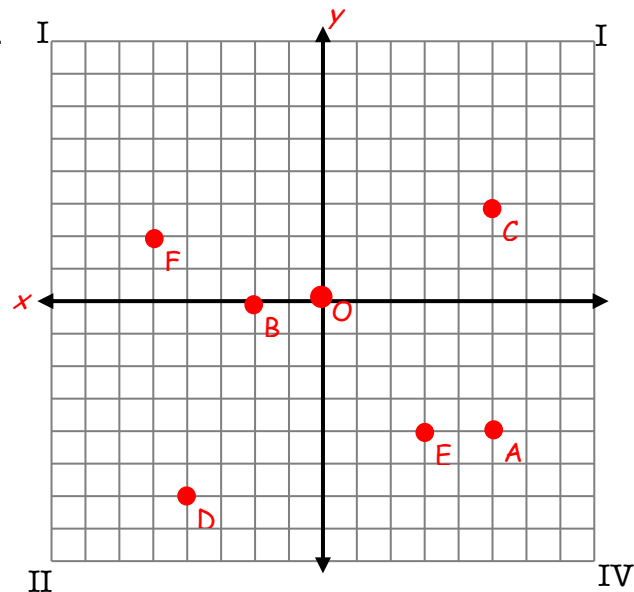
16. Each small square on the grid below is one square unit.

- Label the axes. Graph the origin at the point $(0, 0)$ and label it O .
- Graph and label the ordered pairs below.

- | | |
|-------------|--------------|
| A $(5, -4)$ | B $(-2, 0)$ |
| C $(5, 3)$ | D $(-4, -6)$ |
| E $(3, -4)$ | F $(-5, 2)$ |

- Explain how you located point F on the coordinate plane.

Start at $(0,0)$. Move 5 units to the left then 2 units up.



17. List all ordered pairs (integer coordinates only) that could fit on the grid above and whose coordinates satisfy the conditions that $x > 3$ and $y < -7$.

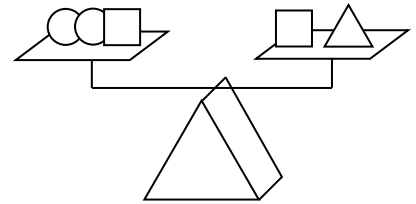
$(4, -8), (5, -8), (6, -8), (7, -8), (8, -8)$

VARIABLES AND BALANCE (EE1)

Essentials Pre-Assessment **Answer Key**

18. The total weight of the scale to the right (both sides together) is 44 units. The triangle weighs 16 units. Find the weight of the circle.

8 units



Use the menu below for problem 19.

PIZZA SHOP MENU			
(The variable represents the cost of an item.)			
Pizza		Drinks	
Cheese slice (<i>c</i>)	\$1.25	Small drink (<i>s</i>)	\$1.00
Pepperoni slice (<i>p</i>)	\$1.75	Medium drink (<i>m</i>)	\$1.50
		Large drink (<i>L</i>)	\$2.00

19. Find a menu item with a cost that makes the following equations true. In different problems, the need not represent the same menu item.

a. $3 \cdot \square = c + p$	Menu item: small drink Cost of menu item: \$1.00
b. $2(s + L) = 2m + p + \square$	Menu item: cheese slice Cost of menu item: \$1.25

20. Solve each equation. Write MM if you used mental math. Otherwise show all work.

a. $7 - x = 3$ <div style="text-align: right;">4</div>	b. $24 = n + 9$ <div style="text-align: right;">15</div>
c. $5m = 60$ <div style="text-align: right;">12</div>	d. $\frac{y}{6} = 8$ <div style="text-align: right;">48</div>

21. Describe in your own words the difference between an expression and an equation. Include examples.

One way to distinguish between these two concepts is to make parallels to grammar. An expression is a mathematical "phrase." It contains numbers and variables, sometimes combined by operations.

For example, 12, 5x, and 3(2 + x) are expressions.

An equation is a mathematical "sentence." It contains two expressions that we assert are equal using a mathematical "verb" (is equal to).

For example, 3(2 + x) = 12 is an equation.