Grade 7 Winter Packet 2017 – Show <u>ALL</u> work on separate sheet of paper.

1.) A recipe used 2/3 cup of sugar for every 2 teaspoons of vanilla. How much sugar was used per teaspoon of vanilla?
MAFS7RP11

A. 1/3   B. 1 1/3   C. 2 2/3   D. 3

2.) A recipe calls for 2/3 cup of sugar for every 4 teaspoons of vanilla. How much vanilla should be used for every 1 cup of sugar? MAFS7RP11

A. 1/6   B. 2 2/3   C. 4 2/3   D. 6
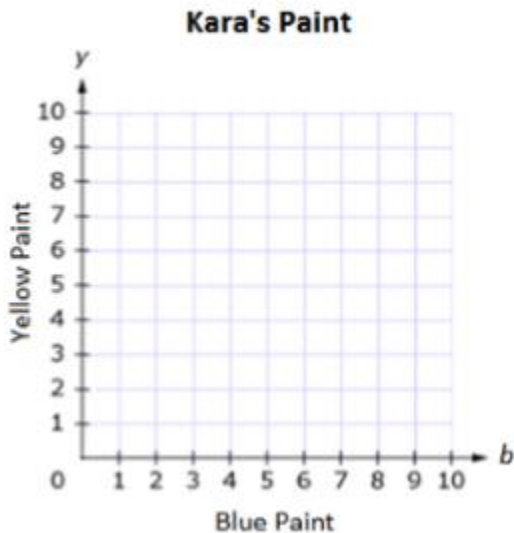
3.) A recipe calls for 2/3 cup of sugar for every 2 teaspoons of vanilla. What is the unit rate in cups per teaspoon?
MAFS7RP11

4.) A recipe calls for 2/3   cup of sugar for every 4 teaspoons of vanilla. What is the unit rate in teaspoons per cup?
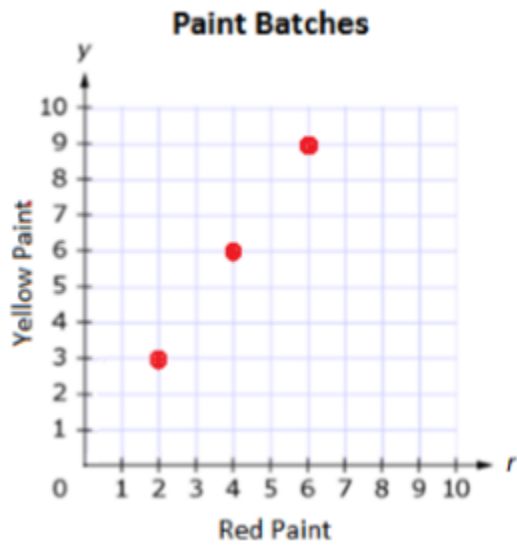MAFS7RP11

5.) Ethan ran 11 miles in 2 hours. What is the unit rate of miles to hour? MAFS7RP12

A. 5.5 miles per hour   B. 0.18… miles per hour

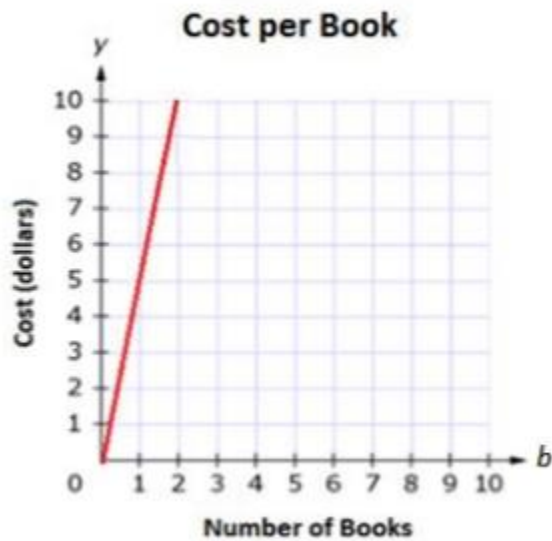C. 5.5 hours per mile   D. 0.18… hours per mile

6.) Kara is mixing paint. Each batch has twice as much blue paint as yellow paint. Plot points to represent the amount of blue and yellow paint used in three different sized batches. MAFS7RP12
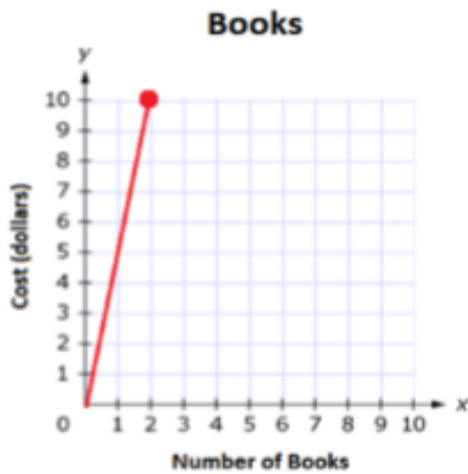

Kara's Paint

7.) The points on the coordinate plane show the amount of red and yellow paint in each batch. Write an equation to represent the relationship between red paint, r, and yellow paint, y, in each batch. MAFS7RP12

Paint Batches

Yellow Paint

Red Paint

8.) The graph below represents the rate for the cost of b books. Write an equation to represent the cost, c. MAFS7RP12

Cost per Book

Cost (dollars)

Number of Books

9.) The ordered pair (1,5) indicates the unit rate of books to cost on the graph shown. What does the point on the graph represent? MAFS7RP12
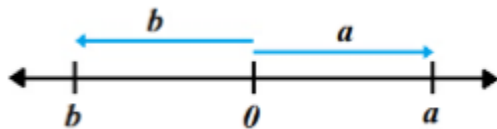
Books

10.) Nicole bought a meal in a town that has no sales tax. She tips 20%. Select all meals Nicole could buy for less than or equal to $15 total. MAFS7RP13

A. $12.36   B. $12.50   C. $13.00   D. $14.79   E. $14.99

11.) An expression is shown. What is the value of the expression? MAFS7NS11
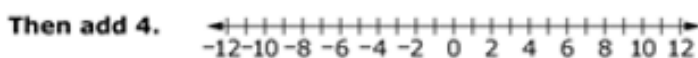
$-5\frac{1}{2} + 7\frac{3}{4}$
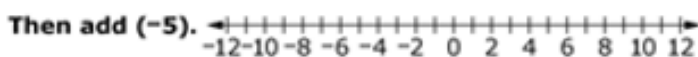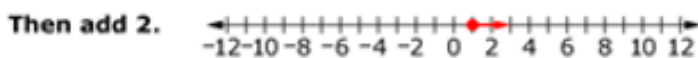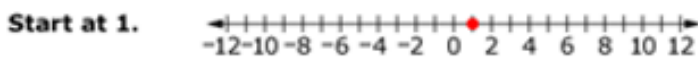
12.) A number line is shown. Jack knows that $a + b = 0$. Which statement is true? MAFS7NS11

A. $a = b$
B. $-b = a$
C. $a - b = 0$
D. $b - a = 0$

13.) An expression is shown.   Kendrick is using number lines to find the value of the expression. His first two steps are shown. Complete the process. What is the value of the expression? MAFS7NS11
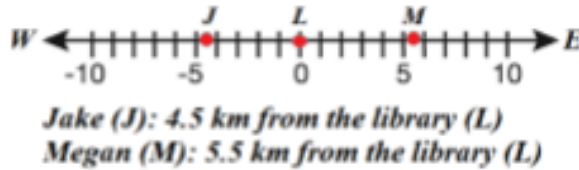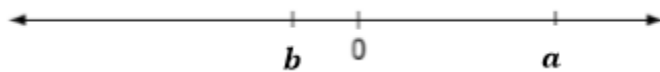
$1+2+(-5)+4$

Start at 1.

Then add 2.

Then add (−5).

Then add 4.

14.) An expression is shown. What is the value of the expression? MAFS7NS11

15.5 + (−16.75)

15.) Megan and Jake both live on the same street that the library is on. How many kilometers (km) apart do Megan and Jake live? MAFS7NS11

Jake (J): 4.5 km from the library (L)
Megan (M): 5.5 km from the library (L)

16.) The sum of a and b is c. The number line shows a and b. Which statements about c are true? MAFS7NS11

A. $|a| < |c|$
B. $|a| = |c|$
C. $|a| > |c|$
D. $c < 0$
E. $c = 0$
F. $c > 0$

17.) Springfield has an elevation of −150 feet. Greenville is 3 times as far below sea level as Springfield. What is Greenville's elevation, in feet? MAFS7NS12

18.) At 8:00, the temperature was 6 degrees Celsius (°C). Three hours later, the temperature was -13 ° C. By how many degrees Celsius did the temperature change? MAFS7NS13

19.) The change in the price of a certain brand of cereal from 2010 to 2012 is shown in the table. In 2009 the price of cereal was $3.69. What was the price of the cereal at the end of 2012? MAFS7NS13

Year	Change (in dollars)
2010	+0.30
2011	+0.20
2012	−0.20

20.) A set of pencils sells for $1.75 and costs $0.40 to make. Twenty percent of the profit (the difference between the purchase price and the amount it costs to make) from each set of pencils goes to a school. If 500 sets are sold, what is the amount of money that will go to the school? MAFS7EE23

21.) A plane is flying at 31,348 feet. It needs to rise to 36,000 feet in two stages. In stage 1, it rises 5% of its initial altitude of 31,348 feet. In stage 2, it rises at a rate of 140.3 feet per minute.

How many minutes does it take for the plane to rise during stage 2? MAFS7EE23
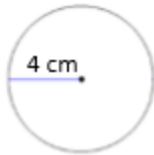
22.) Lisa drew a picture of a boat. She used the scale shown.

 1 inch : 6 feet

 The boat in her picture is 7 inches long. What is the length, in feet,
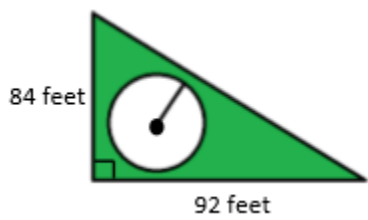
of the actual boat? MAFS7G11

23.) A circle with its dimensions, in centimeters (cm), is shown. What is the area, in square centimeters, of the circle?
MAFS7G24

4 cm

24.) A circle with its dimensions, in inches (in.), is shown. What is the area, in square inches, of half the circle? MAFS7G24

3.7 in.

25.) Mark placed a pool in his backyard, which is enclosed by a triangular fence. The radius of the pool is 20.5 feet. How much of the backyard area is not covered by the pool? MAFS7G24

84 feet

92 feet

26.) The surface area of a cube is 6 square centimeters. What is its volume, in cubic centimeters? MAFS7G26