Unit 3 7th grade math Review

1. Kyra types 140 words in 5 minutes. Then, she types 96 words in 7 minutes. Was her rate of words per minute constant? If so, what is the constant of proportionality?

2. Jordan took 9 hours to read 225 pages and 8 hours to read 92 pages. Was his rate of pages per hour constant? If so, what is the constant of proportionality?

3. Cassandra has a leaky roof. She places a bucket on the floor below the leak. After 2 hours, there are 26 teaspoons of water in the bowl. After 7 hours there are 91 teaspoons in the bowl. Is the rate of teaspoons per hour constant? If so, what is the constant of proportionality?

4. Sierra is downloading songs. In 9 minutes she downloads 18 songs, in 18 minutes, she downloads 36 songs. Is the rate of downloads per minute constant? If so, what is the constant of proportionality?

5. Derek is training for a long bicycle race. He bikes 105 miles in 7 days. A few weeks later, he bikes 120 miles in 10 days. Is the rate of miles per day constant?

6. Corde is going on vacation. He needs to drive 1,286 miles over the course of 3 days. How many miles per day will he drive?

7. Ainsley is running in a race. She runs this 3.1-mile race in 32 minutes. How many miles per minute did she run?

8. This table shows a person saving money at a constant rate.

Weeks	5	10	15	20
Total savings ($)	150	300	450	600

   a. How much is this person saving per week?
   b. How much will this person save in 50 **days**?

9. This table shows how much a person spends on a gym membership.

Month	1	2	3	4
Total spent	40	80	120	160

   a. How much is this person spending per month?
   b. How much will this person spend in 1 ½ years?

10. A ¾ pound box contains 36 chocolates. How many chocolates would be in a one-pound box?

11. Select true or false for each of the following statements about the table below

# of lawns mowed	2	4	6	8
$ earned	50	100	150	200

a. T/F The ratio x:y equals 1:25
b. T/F The ratio x:y is not constant
c. T/F The ratio x:y is constant
d. T/F The ratio x:y does not stay constant

12. A scientist is mixing a chemical solution for an experiment. The solution contains 3/8 of an ounce of a chemical and 1/6 of an ounce of saline. What is the unit rate of chemical to saline solution?

13. Select true or false for each of the following statements about the table below

Week	1	2	3	4
Weight lost (lbs)	4	8	11	12

e. T/F The ratio x:y equals 1:4
f. T/F The ratio x:y is not constant
g. T/F The ratio x:y is constant
h. T/F The ratio x:y does not stay constant

14. John runs 1/5 mile in 4 minutes. If he continues at the same speed, how long will it take him to run 1 mile?

15. Lisa can eat 1/8 of a carton of icecream in 5 minutes. If she continues at the same rate, how long will it take her to eat the whole carton?

16. On a nutritional label, it says that in 2/3 of a cup of cereal, there is 120 calories. How many calories would be in 1/3 of a cup?

17. On the side of a soda can, it says that in 1/3 of the can there are 110 calories. How many are in the entire can?

18. Shiloh walks 1/3 of a mile in 1/5 of an hour. If she walks at a constant rate, how many miles will she walk per hour? Complete the table, then find the unit rate.

Miles	1/3		1		
Hours	1/5				1

19. On a map, ½ inch stands for 250 miles. Two cities are 5 inches apart on the map. How many miles apart are they?

20. On a model airplane, ¼ cm equals 2 feet on a real airplane. If the model airplane is 10 cm long, how long would the real airplane be?

21. Graph the following information.

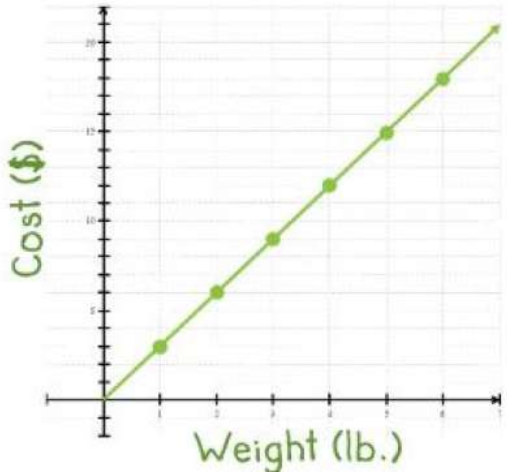
Minutes	3	4	5	6
Gallons	6	8	10	12

a. Is it proportional?
b. What is the constant of proportionality?
c. What is the equation for the relationship?

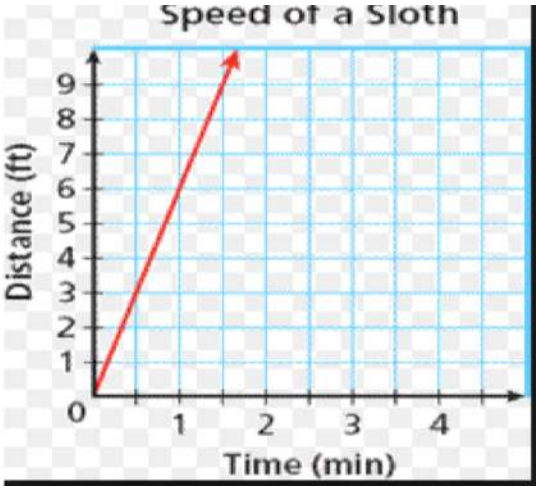
22. For her 3 children, Rebecca spends $654 per month on childcare. Lindsey spends a proportional amount for her 4 children. How much does Lindsey spend per month on childcare?

23. The graph shows the cost of almonds based on pounds you buy. (The x-axis and y-axis are scaled by 1 just in case you can't see it)

a) What is the cost of almonds in dollars per pound?
b) Does this graph represent a proportional relationship?



24. Looking at the graph below, answer the following questions
    a) What is the sloth's speed in feet per minute?
    b) Does this graph represent a proportional relationship?

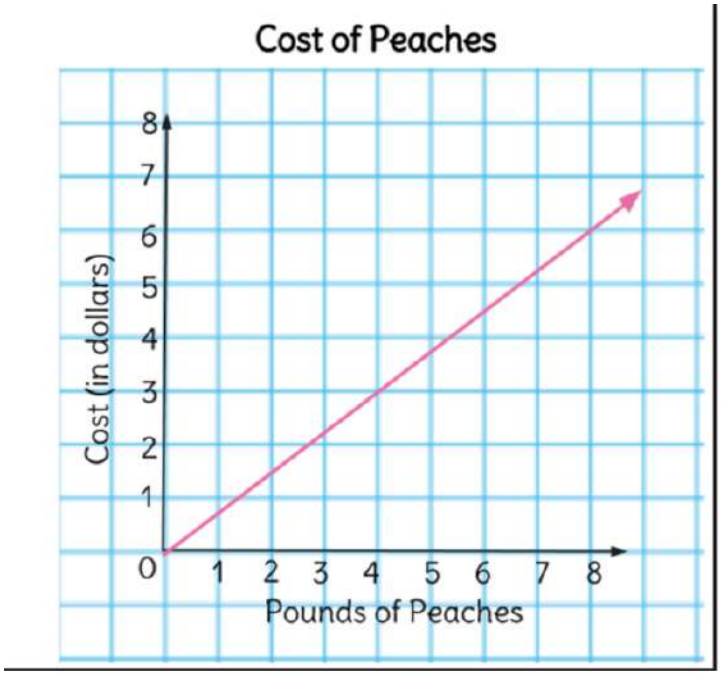


25. Lauren jogs at a rate of 2 miles every 2/5 hour. What is her unit rate?

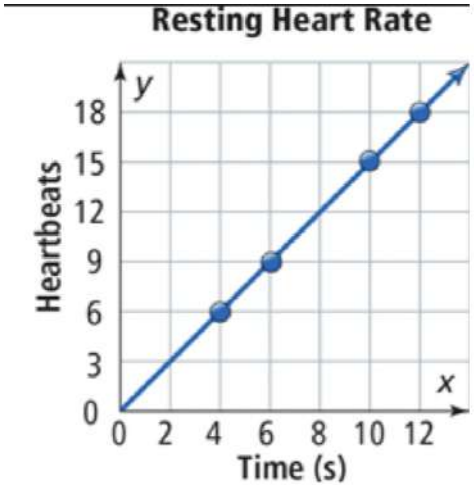
26. Looking at the graph below, answer the following questions:

a) How much do the peaches cost per pound?

b) What does the point (8,6) represent?



27. Looking at the graph below, can you find the number of heartbeats in 13 seconds?



28. An elevator moves at a constant speed of 20 feet per second. Ralph correctly graphs this proportional relationship on a graph. Which of the following points lies on Ralph's graph?

a. (0, 20)
b. (20, 0)
c. (1, 20)
d. (20, 1)

29. Two pounds of dried cranberries cost $5.04, 3 pounds of dried cranberries cost $7.56, and 7 pounds of dried cranberries cost $17.64. Which equation gives the total cost (y) of x pounds of cranberries?

a. Y = 1.68x
b. Y = 2.52x
c. Y = 3.04x
d. Y= 5.04x

30. A bathtub fills at a constant rate. The amount of water in the tub increases by ½ gallon every 1/10 of a minute. What is the unit rate at which the tub fills?