Unit 4 Study Guide

$\overset{Words}{min}$

1. Colby can type 93 words in 3 minutes. His friend Brayden can type __150 words in 5__ minutes. Using ratios, find the unit rate of how much each boy can type in one minute.

   Colby types_____31_____ words per minute $\quad \dfrac{93}{3} \div 3 \rightarrow \dfrac{31}{1}$

   Brayden types_____30_____ words per minute $\quad \dfrac{150}{5} \div 5 \rightarrow \dfrac{30}{1}$

2. Amanda and Lindsey are both looking for part time jobs after school. __Amanda__ finds a job working __16 hours__ a week where she will earn __$120.00 a week__. __Lindsey's__ job will pay her __$144.00__ a week for working __18 hours__. Calculate the unit rate for both Amanda and Lindsey.

   $\dfrac{\$}{hour}$

   Amanda earns ___$7.50___ per hour $\quad \dfrac{120}{16} \div 16 \quad \dfrac{7.5}{1}$

   Lindsey earn ___$8___ per hour $\quad \dfrac{144}{18} \div 18 \quad \dfrac{8}{1}$

3. Marley is building her little brother a sandbox that is 6 feet by 6 feet in their backyard. She figures she needs 100 pounds of sand to fill the box. When she goes to the store, she finds that sand comes in either __20 pound bags for $4.50__ or __25 pound__ bags for __$6.00.__

   A) What is the unit rate per pound for each bag of sand? Show all your work and round to the nearest cent.

   $\dfrac{\$}{pound}$ Unit rate __per pound__ for 20 pound bags __23¢ per pound__ $\quad \dfrac{4.50}{20} \div 20 \rightarrow \dfrac{0.225}{1}$

   Unit rate per pound for 25 pound bags __24¢ per pound__ $\quad \dfrac{6}{25} \div 25 \rightarrow \dfrac{0.24}{1}$

   B) What deal is better for Marley to buy? How many bags will she need to buy? Explain your answer.

   The 20 lb. bag because 23¢ is less than 24¢
   100 lb ÷ 20 lb = 5 bags

4. Madison is going to buy a new vehicle. She is trying to decide between a minivan or a SUV. She wants a vehicle that gets good gas mileage. The sales manager gave her the following information on each vehicle.

Minivan

Gallons	Miles
4	76
8	152

SUV

Gallons	Miles
6	90
12	180

Calculate the unit rate for each vehicle. Which one gets the best gas mileage? $\dfrac{miles}{gal}$

Unit Rate for the Mini Van **19 miles per gal**

Unit Rate for the SUV **15 miles per gal**

$$\frac{76 \div 4}{4 \div 4} \quad \frac{19}{1}$$

$$\frac{90 \div 6}{6 \div 6} \quad \frac{15}{1}$$

Best Gas Mileage **minivan**

5. Create a graph displaying the information above for the best gas mileage. Be sure to label each axis and give the graph a title.

minivan
miles per gallon

miles

76
57
38
19

1 2 3 4

Gallons
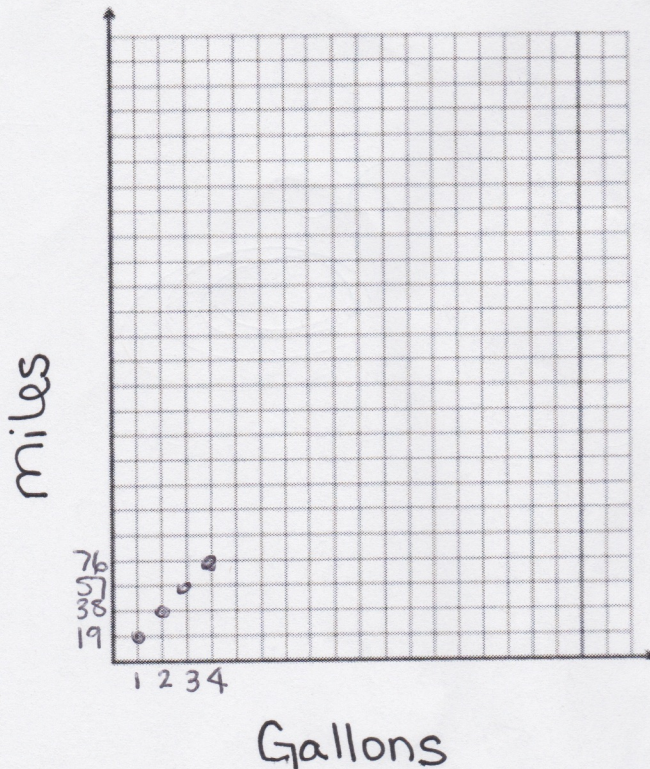
(1 , 19)
(2 , 38)
(3 , 57)
(4 , 76)

Assume each of the following ratio tables represent equivalent ratios. Fill in the missing values.

10.

4	3
8	6
12	9
16	12
20	15

(x2 / ÷2 arrows)

11.

|	
10	11
20	22
30	33
40	44
50	55

12.

13	15
26	30
39	45
52	60
65	75

7. The physical education teachers took their classes to the track. Allie walked 2 miles in 30 minutes. If she continues at this pace, how many miles will she walk in 90 minutes? Complete the double number line to represent the information.

Distance: 2   4   6

6 miles

Time: 30   60   90
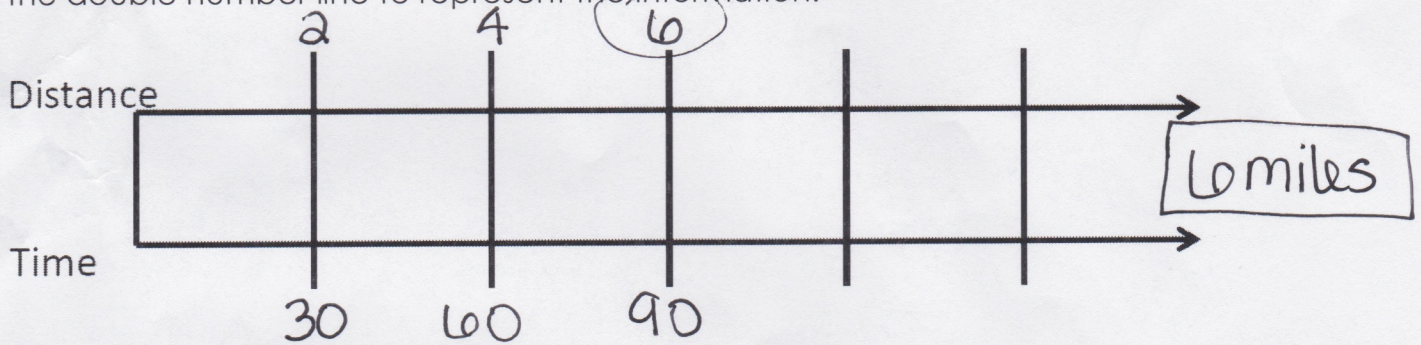
8. When taking a reading test, Amanda can complete 2 questions 6 minutes. How long will it take Amanda to complete the test if there are 10 questions on the test?
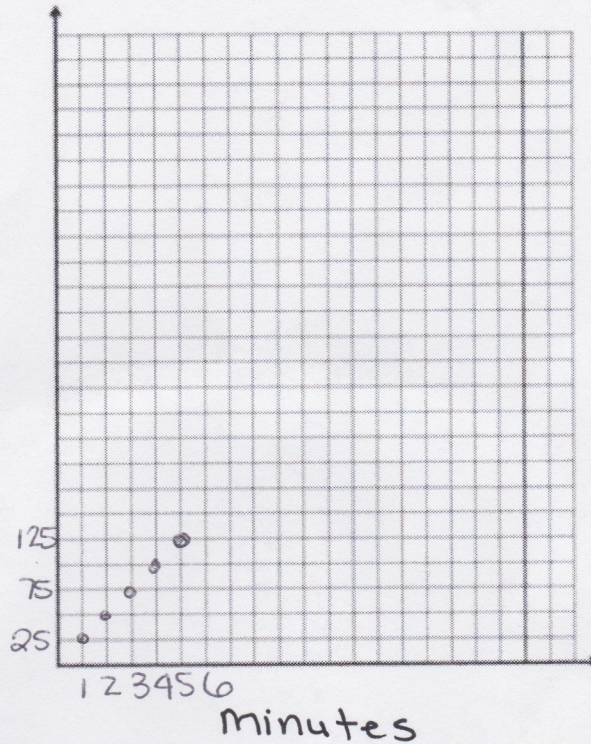
Questions: 2   4   6   8   10

30 min

Time: 6   12   18   24   30
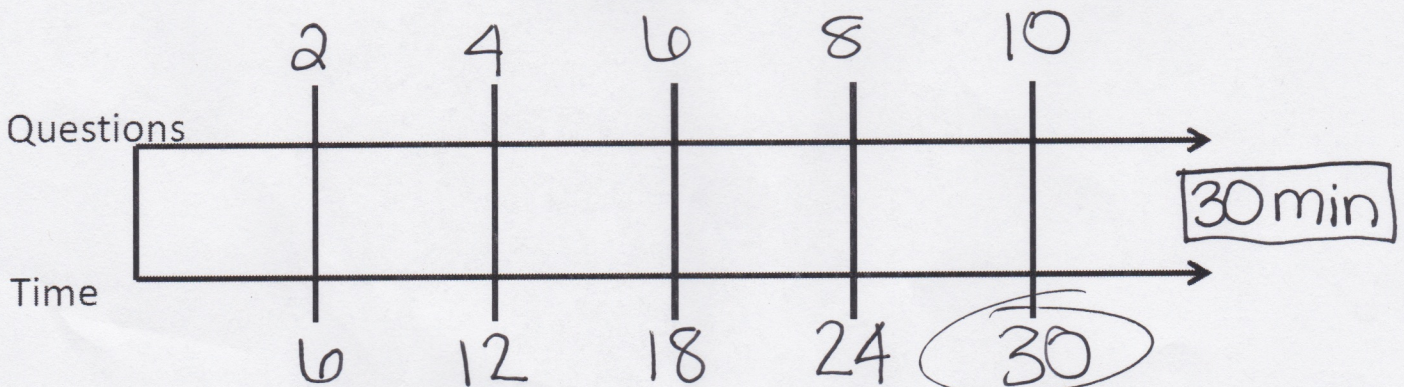
19. Caroline can type 100 words in 4 minutes. Complete the table below. Determine the ordered pairs, create and label the graph to display your data.

Minutes	Words	Ordered Pairs
1	25	(1, 25)
2	50	(2, 50)
3	75	(3, 75)
4	100	(4, 100)
5	125	(5, 125)
6	150	(6, 150)

Words ↑

125
75
25

1 2 3 4 5 6

Minutes

10. What is 20% of 80?

$\frac{20}{100}$ $\frac{}{80}$ reduce $\frac{20\div10}{100\div10}$ $\frac{2}{10}$ rewrite $\frac{2}{10}$ $\frac{}{80}$ $\times8$ $\times8$ = $\boxed{16}$

11. 6 is 40% of what number?

$\frac{40}{100}$ $\frac{6}{}$ reduce $\frac{40\div20}{100\div20}$ $\frac{2}{5}$ rewrite $\frac{2}{5}$ $\frac{6}{}$ $\times3$ $\times3$ = $\boxed{15}$

12. What is 60% of 120?

$\frac{60}{100}$

13. Mrs. Lambert grades 6 essays in 2 hours. How many essays can be graded in 15 hours?

Rate
$\frac{6 \text{ essays}}{2 \text{ hours}}$ →÷2 Unit rate $\frac{3 \text{ essays}}{1 \text{ hr}}$ $\frac{3}{1}$ $\times15$ $\frac{45}{15}$ $\times15$ $\boxed{45 \text{ essays}}$

14. The music teacher at West Creek Middle can clean 4 instruments in 2 hours. How long will it take her to make 40 instruments?

$\frac{4 \text{ instruments}}{2 \text{ hrs}}$ $\times10$ $\frac{40}{20}$ $\times10$ $\boxed{20 \text{ hours}}$