

Ms. Wang
Homework - Rates & Unit Rates

Name _____
Date _____ Class _____

*We will go through each question on the homework during the Wednesday and Thursday classes.
Please submit the homework on Archie by Thursday 11:59 pm.*

20 Questions in Total. Please show me your work. 50% off without work.

A) Use tape diagrams to solve these problems.

1) The juice to sparkling water ratio is 5 : 2. You want 70 cups in all.

- a) Draw Tape Diagrams
- b) How much juice and how much sparkling water will you need for the 70 cups?

2) You make tie-dyed shirts. Your most frequently used colors are orange and green.

- a) For the orange dye, you use red and yellow in a ratio of 3 : 2. How many quarts of red and yellow dye will you need if you want to make 80 quarts of orange dye (Tape Diagram)?
- b) For the green dye, you use blue and yellow in a ratio of 5 : 2. How many quarts of blue and yellow dye will you need if you want to make 56 quarts of green dye (Tape Diagram)?

B) Word Questions

3) You are trying to gain muscle and need to consume more protein every day. If you have a protein shake that contains 32 grams and the entire shake is 340 grams.

- a) What percentage of the entire shake is protein?
- b) What is the ratio between grams of protein and grams of non-protein?

4) You run 24 feet every 4 seconds. Your friend runs 28 feet every 6 seconds. Are you and your friend running at the same pace? If not, who is faster? Explain.

5) You ran 400 meters in 62.5 seconds. How many meters did you run per second?

6) Your ratio of savings to expenses is 1 : 6. If you save \$250, what are your expenses? Represent the ratio using a tape diagram.

7) There are 5 boys for every 3 girls at an event. If there are 36 girls at the event, how many boys are there?

8) A parking lot has a ratio of 17 : 3 full parking spaces to empty parking spaces. If there are 500 total parking spaces in the lot, how many spaces are full?

9) The ratio of four numbers is 1 : 2 : 4 : 5. The sum of the numbers is 120. What are the numbers?

10) There are 3 band members for every 2 choir members. If there are 84 people in the choir, then how many people are in the band? Represent the ratio using a tape diagram.

11) Computer A downloads 6 files in 15 seconds. Computer B downloads 8 files in 25 seconds. Which computer is faster? What is the difference between the number of files that each computer can download in 5 minutes?

12) A university pays \$9000 for 720 identical books. The books arrived in 12 equally packed cartons.

a) What is the cost of each book?

b) How many books are in each carton?

c) What is the total cost of the contents of each carton?

13) The ratio of ranch-style houses to two-story houses in a neighborhood is 6 : 5. Interpret the ratio.

14) You need to have \$60,000 in sales in 24 workdays. After 10 days, you have sold \$22,000. Are you on pace to meet the goal? Explain.

C) Fill in the blank so that the ratios are equivalent.

15) 4 : 9 and 12 : ____

16) 7 : 5 and ____ : 35

17) 8 : 3 and 48 : ____

D) Write a unit rate for the situation.

18) 32 houses in 6 square miles

19) \$24.80 for 8 ounces

20) 90 words typed in 3 minutes