

Math 6 - Unit 2: Ratios, Rates, Proportions

Name: _____

Homework (Unit Rates, Proportions & Percents)

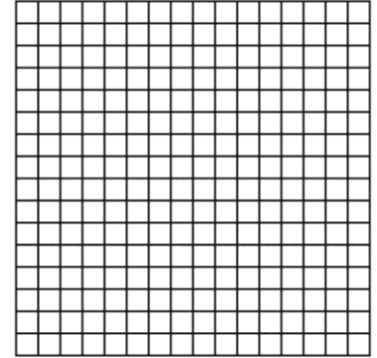
Class Period: 1 2 3 4 Date: _____

All work for these problems must be done on a separate piece of paper and all work must be shown to get credit.

Use the table to answer the questions below.

- 1) The table below shows Lizzie's earnings at her job. Complete the table using equivalent fractions and plot the ordered pairs on the coordinate plane. (Don't forget to label the coordinate plane and choose an appropriate scale.)

Lizzie's Earnings		
Hours (x)	Dollars Earned (y)	Ordered Pair (x,y)
1	\$5	(1, 5)
2	\$10	(2 , 10)
3		(,)
		(4 , 20)



Solve. (Don't forget to properly label your answers)

- 2) Divide 33 photos into two groups so the ratio is 4 to 7.
 3) Divide 28 cans of soda into two groups so the ratio is 3 to 4. **12:16**

Use the following information and answer the questions below.

The ratio of kittens to puppies in an animal shelter is 3 kittens and 1 puppies.

- 4) If there are 32 animals, how many kittens are there?
 5) If there are 24 kittens, how many puppies are there? **8 puppies**
 6) What is the ratio of kittens to baby animals (puppies and kittens together)?

Write the ratio as a unit rate.

- 7) \$125 for 5 meals **\$25 per meal**
 8) 12 meters in 28 seconds
 9) 72 oz. in 6 steaks **\$12 per steak**
 10) \$48 for 12 tulips
 11) 45 miles in 3 hours **15 miles per hour**
 12) 150 times in 15 min.

Write as a unit rate using proper "unit rate language."

- 13) 45 oranges in 5 minutes **There are 9 oranges in 1 minute**
 14) 18 miles in 30 minutes
 15) \$36 for 4 tickets **\$9 per ticket**

Answer the following questions.

- 16) Adam drove 360 miles and used 12 gallons of gas. How many miles did he drive per gallon of gas?
- 17) Joshua's cousin pledged a total of \$33 for a charity walk. If Joshua walked 3 miles, how much did his cousin pay per mile? **\$11 per mile**
- 18) Jersey Mike's made 27 sandwiches. They used 12 pounds of turkey. How much turkey was used per sandwich?

Complete the ratio tables.

19)

3	15	21	27
4	20	28	36

20)

6		6,000	
10	100		1,000,000

State whether the ratios are proportional. Write yes or no.

21) $\frac{8}{16}, \frac{4}{8}$ **yes**

22) $\frac{5}{6}, \frac{10}{18}$

23) $\frac{8}{9}, \frac{9}{10}$ **no**

Solve each proportion for the given variable.

24) $\frac{5}{45}, \frac{u}{9}$

25) $\frac{r}{15}, \frac{5}{20}$ **$r = 3.75$**

26) $\frac{3}{6}, \frac{20}{y}$

27) $\frac{s}{30}, \frac{3}{5}$ **$s = 18$**

28) $\frac{3.5}{7}, \frac{j}{4}$

29) $\frac{12}{a}, \frac{18}{6}$ **$a = 4$**

Set up a proportion and solve the following:

- 30) Jai won a pie-eating contest, eating 5 pies in 10 minutes. At that rate, how many pies can he eat in two hours?
- 31) Matthew hiked 12 miles in 4 hours. At that rate, how far can he hike in 18 hours? **54 miles**
- 32) A recipe calls for 3.5 cups of sugar to make 12 cookies. How much sugar is needed for Maryam to make 30 cookies?
- 33) If 20 necklaces can be bought for \$40, how much will 12 necklaces cost? **\$24**

Write each percent as a fraction in simplest form.

34) 15%

35) 20% $\frac{1}{5}$

36) 80%

37) 45% $\frac{9}{20}$

38) 90%

39) 3% $\frac{3}{100}$

Write each fraction as a percent. Use equivalent ratios to solve.

40) $\frac{3}{10}$

41) $\frac{4}{20}$ **20%**

42) $\frac{2}{5}$

43) $2\frac{1}{2}$ **250%**

44) $5\frac{1}{25}$

45) $\frac{8}{4}$ **200%**

Write each percent as a decimal.

46) 3%

47) 45% **0.45**

48) 104%

49) 67% **0.65**

50) 7%

51) 345% **3.45**

Write each decimal as a percent.

52) 0.99 53) 0.63 **63%** 54) 0.5 55) 0.87 **87%** 56) 2.45 57) 0.3 **30%**

Determine the missing value.

58) What is 20% of 58?

59) What is 42% of 100? **42**

60) 36 is what percent of 50?

61) 52 is what percent of 130? **67.6**

62) 120 is 30% of what number?

63) 2 is what percent of 10? **20%**

64) In a class of 30 students 40% got an A on their math test. How many students did NOT get an A?