

Answer the following questions on a separate sheet of paper and turn in with all work shown to get full credit.

- 1) What is the difference between a rate and a unit rate? *A rate is a comparison of two numbers w/ different units, a unit rate is a special rate where one value is 1.*
- 2) Is $\frac{12}{18} = \frac{5}{8}$ a proportion? Why or why not? How do you know? *No, not proportional because cannot simplify to the same ratio. Also, when you cross multiply, you get $12 \cdot 8 = 96$ and $18 \cdot 5 = 90$, since the numbers aren't equal, the ratios aren't equal.*

- 3) Fill in the missing values in the ratio table: $\frac{26 \div 12}{36 \div 18} = \frac{5}{8}$

5	15	45	100
3	9	27	60

- 4) 19 is 20% of what number? *$\frac{19}{x} = \frac{20}{100} \cdot \frac{1}{5}$*
- 5) Find 30% of 400 *$\frac{30}{100} = \frac{x}{400}$ $x = 120$*
- 6) Determine the missing value: $\frac{25}{15} = \frac{x}{9}$ *$\frac{25 \div 5}{15 \div 5} = \frac{5 \cdot 3}{3 \cdot 9}$ $x = 15$*

- 7) Write the rate as a unit rate (including units): \$31.50 for 9 tickets *$31.50 \div 9 = \3.50 per ticket*
- 8) Maren drove 245 miles in 3.5 hours. Donika drove 427 miles in 7 hours.
- 8a) Who drove at the fastest rate of speed? MAREN

8b) Justify your answer: WHEN I FOUND THE UNIT RATES, MAREN WENT MORE MILES IN ONE HOUR THAN DONIKA.

- 9) Ephraim the Snake is 3 feet long. Asia the Fish is 49 inches long. How much longer is Asia than Ephraim?

$\frac{3ft}{x in} = \frac{1ft}{12in}$ $3 \times 12 = 36$ inches
 EPHRAIM = 36in
 ASIA = 49in
 ASIA IS 13 INCHES LONGER

- 10) The table below shows the number of tickets sold for each movie. What does the ratio 5:3 represent?

Item	Avengers	Thor	Captain America	Spider Man
Quantity Sold	12	15	30	10

NONE, THERE IS NO COMBO THAT IS IN A 5:3 RATIO.

- 11) The table below shows the cost for varying numbers of meals at a local restaurant. If the ratio stays the same, determine the value of n .

Number of Meals		Cost
3	$\times 12$	\$36
5	$\times 12$	\$60
12	$\times 12$	\$144
20	$\times 12$	n

$$n = 240$$

- 12) The ratio of red to blue socks in a drawer is 8:12. If there are 80 socks in the drawer, how many are blue?

$$\frac{8R}{12B}$$

$$\frac{12B}{20 \text{ TOTAL}} = \frac{48 \text{ BLUE}}{80 \text{ TOTAL}}$$

48 BLUE SOCKS

- 13) There are 80 people eating in a Chinese restaurant. If 25% of these people did **NOT** order an eggroll, how many people did order an eggroll?

75% DID EAT AN EGGROLL

75% OF 80 IS 60, SO 60 PEOPLE ORDERED AN EGG ROLL

- 14) David deposited \$312 in the bank last week. If this was 20% of his paycheck, how much was his paycheck?

$$\frac{312}{W} = \frac{20}{100} \times \frac{1}{5}$$

$$5 \times 312 = \$1560$$

- 15) Mrs. Katz is saving for a beach vacation. She needs to save \$3,500.

If she has only saved 30% of that amount, how much has she saved?

$$\frac{3500}{1050.0} \times .3$$

\$1050

- 16) The prices of 3 different bottles of salad dressing are given in the table.

Which size bottle is the BEST value, according to the price per ounce?

Size	Price
20 ounces	\$4.20
15 ounces	\$2.25
5 ounces	\$0.90

$$4.2 \div 20 = .21/\text{oz.}$$

$$2.25 \div 15 = .15/\text{oz.}$$

$$0.9 \div 5 = .18/\text{oz.}$$

15oz. bottle

- 17) The weight of a rhinoceros is 8 kg. If there are 1000 grams in a kilogram, how many grams does the rhinoceros weigh?

8000 g

- 18) Sixty liters of fruit punch were served at a party. If there are 1000 liters in a kiloliter, how many kiloliters were served?

$$\frac{60L}{x \text{ KL}} = \frac{1000L}{1 \text{ KL}}$$

$$\frac{1000x}{1000} = \frac{60}{1000}$$

$$x = .06 \text{ KL}$$

- 19) If you spend \$30 on dinner out and want to leave a 20% tip for good service, what would your total bill be?

$$30 \times 1.2 = \$36$$

$$\text{or } 20\% \text{ of } 30 \text{ is } \$6 \quad 30 + 6 = \$36$$

- 20) If a store sells a shirt for \$16 and you have a 20% off coupon, how much would you pay for the shirt before taxes?

$$16 \times .8 = \$12.80$$

- 21) How much would you pay for the shirt in question #20 including 6% sales tax?

$$\$13.57$$

$$12.80 \times 1.06 = 13.568$$

round up.