

Name \_\_\_\_\_

key

Date \_\_\_\_\_

6th Grade

MATH STUDY GUIDE

Ch1 Ratios

Complete the work under the problem. Circle your answer.

1. What is the greatest common factor of 8 and 28?

8: 1, 2, 4, 8  
 28: 1, 2, 4, 7, 14, 28

$$\text{GCF} = 4$$

"Factors are FEW" - the numbers that go into another number

2. What is the least common multiple of 4, 10, 12?

4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60  
 10: 10, 20, 30, 40, 50, 60  
 12: 12, 24, 36, 48, 60

$$\text{LCM} = 60$$

"Multiples are MANY" - the numbers you count up by

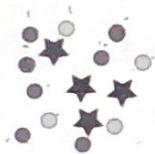
3. There are 4 boys and 10 girls in the class. Write the ratio of boys to girls in simplest form. Then explain its meaning.

$$\frac{\text{boys}}{\text{girls}} = \frac{4 \text{ boys}}{10 \text{ girls}} \div \frac{2}{2} = \frac{2 \text{ boys}}{5 \text{ girls}}$$

Meaning:

For every 2 boys, there are 5 girls.

4. Write the ratio of stars to circles in simplest form. Then explain its meaning.



$$\frac{\text{stars}}{\text{circles}} = \frac{4 \text{ stars}}{11 \text{ circles}}$$

For every 4 stars, there are 11 circles.

5. Write the ratio as a fraction in simplest form.

24 brown socks out of 39 total socks

$$\frac{24 \text{ brown}}{39 \text{ total}} \div \frac{3}{3} = \frac{8 \text{ brown}}{13 \text{ total}} \text{ or } \frac{8}{13}$$

6. Use the table to write the ratio of trucks to SUVs in simplest form.

Types of Vehicles	Number of Vehicles
Car	6
Truck	10
SUV	14
Minivan	15

$$\frac{\text{trucks}}{\text{SUVs}} = \frac{10}{14} \div \frac{2}{2} = \frac{5}{7}$$

7. Write each rate as a unit rate.

8 championships in 2 years (championships per year)

$$\frac{8}{2} \div \frac{2}{2} = \frac{4 \text{ championships}}{1 \text{ year}}$$

5 notebooks for \$2.50 (dollars per notebook)

$$\frac{\$2.50}{5} \div \frac{5}{5} = \frac{\$0.50}{1 \text{ notebook}}$$

$$\begin{array}{r} 0.50 \\ 5 \overline{) 2.50} \\ \underline{-25} \\ 000 \end{array}$$

6 cans of soup for \$8 (dollars per can)

$$\frac{\$8}{6 \text{ cans}} \div \frac{6}{6} = \frac{\$1.33}{1 \text{ can}}$$

$$\begin{array}{r} 1.33 \\ 6 \overline{) 8.00} \\ \underline{-6} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 2 \end{array}$$

8. Are the following ratios proportional?

a) \$15 for 5 pairs of socks; \$25 for 10 pairs of socks

$$\frac{\$15}{5} \stackrel{?}{=} \frac{\$25}{10} \quad \frac{\$15}{5} \times \frac{2}{2} = \frac{\$30}{10}$$

No, not equal

b) 15 minutes to drive 21 miles; 25 minutes to drive 35 miles

$$\frac{15 \text{ min}}{21 \text{ miles}} \stackrel{?}{=} \frac{25 \text{ min}}{35 \text{ miles}} \quad \frac{15}{21} \div \frac{3}{3} = \frac{5}{7}$$

$$\frac{25}{35} \div \frac{5}{5} = \frac{5}{7}$$

Yes, they are equal.

9. Aaron rides a bicycle 14 miles every 3 hours. At this rate, how many hours did Aaron ride if he rode 56 miles?

$$\frac{14 \text{ mi}}{3 \text{ hr}} = \frac{56 \text{ mi}}{? \text{ hr}}$$

To be =, you must multiply numerator and denominator by the same number.

$$\frac{14}{3} \times \frac{4}{4} = \frac{56 \text{ mi}}{12 \text{ hr}} \rightarrow \text{Aaron rode 12 hours}$$

\* You can also use cross-multiplying for #8.