

## Multiplying and Dividing Fractions and Mixed Numbers

To multiply fractions, multiply the numerators and then multiply the denominators. Write the product of the numerators over the product of the denominators and write in simplest form. To divide fractions, multiply the dividend by the reciprocal of the divisor. Remember to convert mixed numbers to improper fractions before multiplying or dividing.

### ▶ Examples

$$\begin{aligned}\frac{3}{4} \cdot \frac{2}{7} &= \frac{6}{28} \\ &= \frac{3}{14}\end{aligned}$$

$$\begin{aligned}2\frac{2}{5} \cdot 3\frac{1}{3} &= \frac{12}{5} \cdot \frac{10}{3} \\ &= \frac{120}{15} \\ &= 8\end{aligned}$$

$$\begin{aligned}\frac{1}{2} \div \frac{3}{4} &= \frac{1}{2} \cdot \frac{4}{3} \\ &= \frac{4}{6} \\ &= \frac{2}{3}\end{aligned}$$

$$\begin{aligned}3\frac{3}{4} \div 1\frac{1}{2} &= \frac{15}{4} \div \frac{3}{2} \\ &= \frac{15}{4} \cdot \frac{2}{3} \\ &= \frac{30}{12} \\ &= \frac{5}{2} \\ &= 2\frac{1}{2}\end{aligned}$$

### ○ Practice

**Directions:** For Numbers 1 through 6, multiply or divide the fractions and mixed numbers. Write your answers in simplest form.

1.  $\frac{1}{5} \cdot \frac{3}{4} =$  \_\_\_\_\_

4.  $\frac{3}{20} \cdot \frac{9}{20} =$  \_\_\_\_\_

2.  $\frac{3}{7} \div \frac{4}{5} =$  \_\_\_\_\_

5.  $\frac{11}{12} \div \frac{1}{2} =$  \_\_\_\_\_

3.  $5\frac{1}{10} \div 4\frac{1}{4} =$  \_\_\_\_\_

6.  $7\frac{2}{9} \div \left(-7\frac{5}{6}\right) =$  \_\_\_\_\_

**Directions:** For Numbers 7 through 11, use multiplication or division to solve each problem.

7. A bag of popcorn contains  $13\frac{1}{2}$  ounces. Each serving is  $2\frac{3}{4}$  ounces. How many servings are in each bag of popcorn?  
\_\_\_\_\_
8. Stu rides his bike to and from school every day. Last week, in the five day school week, Stu rode a total of  $16\frac{1}{4}$  miles. How far does Stu ride his bike each day?  
\_\_\_\_\_
9. Heather weighs  $\frac{2}{5}$  as much as her dad. Her dad weighs 245 pounds. How much does Heather weigh?  
\_\_\_\_\_
10. One half of the students in Erin's class have brown hair. Of the students with brown hair,  $\frac{2}{3}$  have brown eyes. What fraction of students in Erin's class have brown hair and brown eyes?  
\_\_\_\_\_
11. Lindsey needs  $1\frac{1}{3}$  cups of oatmeal to make a batch of cookies. If Lindsey makes  $2\frac{1}{2}$  batches of cookies, how much oatmeal will she need?

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

Math 8 Notebook Check – Quarter 3

- 1.) Two terms with the same variable and exponent, such as  $3x$  and  $8x$ , are called \_\_\_\_\_. (8-1)
  
- 2.)  $3(x + 1) = 3x + 3$  is an example of the \_\_\_\_\_ property. (8-1)
  
- 3.) When solving equations, which would be the first step to solve  $3x + 5 = 8$ ? (8-2)  
Add 5          Subtract 5          Multiply by 3          Divide by 3
  
- 4.) When solving inequalities, when do you “flip” the inequality symbol? (8-8)
  
- 5.) How do we know when to use an “open”○ or a “colored in”● circle when graphing inequalities? (8-6)
  
- 6.) What are the two formulas we know for slope? (9-4)
  
- 7.) Define arithmetic sequence: (9-1)
  
- 8.) Give an example of an arithmetic sequence. (9-1)

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- 9.) What is the equation for slope-intercept form (graphing)? \_\_\_\_\_ (9-6)

10.) Sketch a scatter plot with a negative correlation/relationship. (9-9)



11.) If a system of equations is parallel, how many solutions are there? \_\_\_\_\_ (9-7)

12.) If a system of equations intersect, how many solutions are there? \_\_\_\_\_ (9-7)

13.) What does the inequality symbol  $>$  mean? \_\_\_\_\_ (8-6)

14.) Is  $x = 8$  a solution to  $x > 8$ ? \_\_\_\_\_ (yes/no) (8-6)

15.) When graphing a line in slope-intercept form, the first point you graph is the slope. True or False? (9-6)

16.) What is the general formula (equation) we used for direct variation? \_\_\_\_\_ (9-5)

17.) Define slope: (NOT the formula) (9-4)

18.) Define term: (9-1)

19.) Define sequence: (9-1)

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20.) Define domain: (9-2)

**BONUS:** Given only the equations of two lines (NOT the graphs), how can you tell if two equations are parallel?