Name _____ # _____

Multiplying & Dividing Fractions Study Guide

1. Three friends are sharing ½ of a cake. How much of the cake does each friend get?

2. What is the area of a rectangular garden with a length of 4 yards and a width of $\frac{6}{8}$ yard?

3. Draw an area model to show $\frac{1}{3} \times \frac{3}{4}$.

4. Draw an area model to show $\frac{1}{3} \div 4$.

5. Jackson wants to divide 3 pizzas into $\frac{1}{8}$ sections. If he does this, how many pieces will he have?

6. Barbara drinks ⅓ cup of milk each day. How many days will it take for Barbara to use 6 cups of milk?

7. Jimmy picked $3\frac{1}{2}$ pounds of apples from an orchard. Of the apples, $\frac{1}{4}$ were green. How many pounds of green apples did Jimmy pick?

8. Draw a number line to show $2 \div \frac{1}{4}$.

9. Draw a number line to show the product of $\frac{1}{3}$ and $\frac{3}{4}$.

10. Write a real world word problem that could be solved by using the expression $\frac{1}{3} \div 4$.

11. Mrs. Fowler has 20 students in her class. One-fourth of them are boys. The rest are girls. How many students are girls?

12. Write a real world word problem that could be solved using the expression $5 \div \frac{1}{2}$.

13. Pat, Betty, Margie and Cathy want to make cookies. They don't want to use the full recipe, which calls for 2 cups of flour, because it makes too many cookies. Each of them decides to scale down the recipe by a different fraction. The table shows how each student scaled down the amount of flour needed in the full recipe. Who made the largest amount of cookies?

Student	Scaled Amount of Flour
Pat	$\frac{3}{4}$ of 2 cups of flour
Betty	$\frac{1}{4}$ of 2 cups of flour
Margie	$\frac{1}{8}$ of 2 cups of flour
Cathy	$\frac{1}{2}$ of 2 cups of flour

14. Six friends are sharing 9 cups of Gatorade equally. How much Gatorade will each friend get?

15. The students in Mrs. Shafer's class painted ceiling tiles as an end of year project. Each student painted $\frac{1}{3}$ of a tile, and the class painted 10 tiles in all. How many students are in the class?

16. Shari multiplied $\frac{3}{4}$ by another number. The product was less than $\frac{3}{4}$. What type of number could she have multiplied by?

17. Ben has $10 to spend and bubble gum costs $\frac{1}{4}$ of a dollar. If he spends all of his money on bubble gum, how many pieces can he buy?

18. Zuri drew this rectangle. What is its area?

$3\frac{1}{3}$ feet

$1\frac{1}{5}$ feet

19. Dev has $\frac{1}{3}$ pound of jelly beans and wants to put the same amount into each of 4 bags. What amount of jelly beans did Dev put into each bag?

20. What happens when a whole number is multiplied by:

- An improper fraction?

- A fraction equal to one?

- A fraction less than one?

Name _____KEY_____ # _____
Multiplying & Dividing Fractions Study Guide

1. Three friends are sharing ½ of a cake. How much of the cake does each friend get?
½ ÷ 3 = ⅙ cake
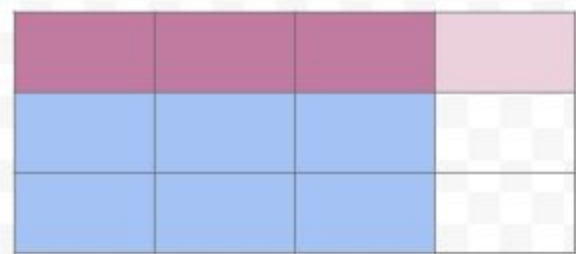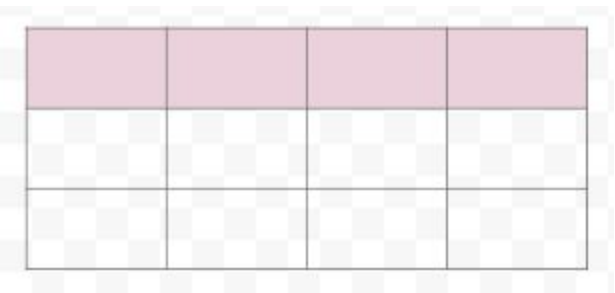 ● **Don't forget to Keep, Change, Flip!**

2. What is the area of a rectangular garden with a length of 4 yards and a width of $\frac{6}{8}$ yard?
4 x 6/8 = 24/8 = 3 square yards

3. Draw an area model to show $\frac{1}{3}$ x $\frac{3}{4}$.

4. Draw an area model to show $\frac{1}{3}$ ÷ 4.

5. Jackson wants to divide 3 pizzas into $\frac{1}{8}$ sections. If he does this, how many pieces will he have?
3 ÷ ⅛ = 24 sections
  ● **Don't forget to Keep, Change, Flip!**

6. Barbara drinks ⅓ cup of milk each day. How many days will it take for Barbara to use 6 cups of milk?
6 ÷ ⅓ = 18 days
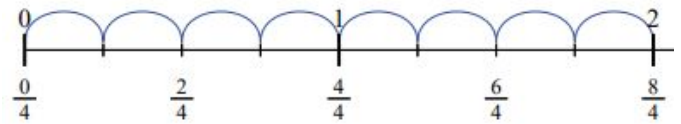 ● **Don't forget to Keep, Change, Flip!**

7. Jimmy picked $3\frac{1}{2}$ pounds of apples from an orchard. Of the apples, $\frac{1}{4}$ were green. How many pounds of green apples did Jimmy pick?
3 ½ x ¼ OR 3 ½ ÷ 4 = ⅞ pound
  ● **Don't forget to change mixed numbers into improper fractions before multiplying or dividing!**

8. Draw a number line to show 2 ÷ $\frac{1}{4}$.
Here is an example:

9. Draw a number line to show the product of $\frac{1}{3}$ and $\frac{3}{4}$.
Find the product of ⅓ and ¾ , then graph this on a number line. A correct answer could show a number line with twelfths or fourths if you put it in simplest form.

10. Write a real world word problem that could be solved by using the expression $\frac{1}{3}$ ÷ 4.
Answer should include ⅓ of something being divided into 4 pieces. For instance, Sally has ⅓ of a cake and wants to eat it over the next 4 days. If she eats an equal amount each day, how much of the cake will she eat each day?

11. Mrs. Fowler has 20 students in her class. One-fourth of them are boys. The rest are girls. How many students are girls?
20 divided into fourths is 5, so 5 students are boys. 15 are girls.

12. Write a real world word problem that could be solved using the expression $5 \div \frac{1}{2}$.

Answer should include 5 of something being divided into pieces that are each ½ of a whole
For instance, Sally has 5 cups of milk and wants to drink ½ cup each day. How many days will the milk last?

13. Pat, Betty, Margie and Cathy want to make cookies. They don't want to use the full recipe, which calls for 2 cups of flour, because it makes too many cookies. Each of them decides to scale down the recipe by a different fraction. The table shows how each student scaled down the amount of flour needed in the full recipe. Who made the largest amount of cookies?

Student	Scaled Amount of Flour
Pat	$\frac{3}{4}$ of 2 cups of flour
Betty	$\frac{1}{4}$ of 2 cups of flour
Margie	$\frac{1}{8}$ of 2 cups of flour
Cathy	$\frac{1}{2}$ of 2 cups of flour

Pat is making the largest part of the recipe, so she is making the largest amount of cookies.

14. Six friends are sharing 9 cups of Gatorade equally. How much Gatorade will each friend get?
9 ÷ 6 = 9/6 cup = 1 3/6 cups = 1 ½ cups

15. The students in Mrs. Shafer's class painted ceiling tiles as an end of year project. Each student painted $\frac{1}{3}$ of a tile, and the class painted 10 tiles in all. How many students are in the class?
10 ÷ ⅓ = 30 students
● Don't forget to Keep, Change, Flip!

16. Shari multiplied $\frac{3}{4}$ by another number.   The product was less than $\frac{3}{4}$. What type of number could she have multiplied by?
The scaling rule tells us that multiplying by a fraction less than 1 would result in a product less than the original number.

17. Ben has $10 to spend and bubble gum costs

$\frac{1}{4}$ of a dollar. If he spends all of his money on bubble gum, how many pieces can he buy?
10 ÷ ¼ = 40 pieces
● Don't forget to Keep, Change, Flip!
OR, you could know that there are 4 quarters in $1, so 10 x 4 = 40

18. Zuri drew this rectangle. What is its area?
$3\frac{1}{3}$ feet

$1\frac{1}{5}$ feet

3 ⅓ x 1 ⅕ = 4 square feet
● Don't forget to change mixed numbers into improper fractions before multiplying or dividing!

19. Dev has $\frac{1}{3}$ pound of jelly beans and wants to put the same amount into each of 4 bags. What amount of jelly beans did Dev put into each bag?
⅓ ÷ 4 = 1/12 pound
● Don't forget to Keep, Change, Flip!

20. What happens when a whole number is multiplied by:

● An improper fraction? The answer will be greater than the original whole number.

● A fraction equal to one? The answer will be the same as the original whole number.

● A fraction less than one? The answer will be less than the original whole number.