

Name: Class:

Divide fractions by whole numbers in recipes.

1. From the list of ingredients below, what quantity of each ingredient would you need to make a fourth of the original recipe?

Banana cake: ingredients

$2\frac{1}{2}$ cups all-purpose flour
 1 tablespoon baking soda
 1 pinch salt
 $\frac{1}{2}$ cup unsalted butter
 $\frac{1}{2}$ cup chopped walnuts

1 cup white sugar
 $\frac{3}{4}$ cup light brown sugar
 2 eggs
 4 ripe bananas, mashed
 $1\frac{1}{3}$ cup buttermilk

2. From the list of ingredients below, what quantity of each ingredient would you need to make a fourth of the original recipe?

Vanilla cake: ingredients

$2\frac{1}{4}$ cups all-purpose flour
 1 tablespoon baking soda
 1 pinch salt
 $\frac{2}{3}$ cup unsalted butter
 $\frac{3}{4}$ cup chopped walnuts

1 cup white sugar
 $\frac{1}{3}$ cup light brown sugar
 4 eggs
 4 grams of vanilla essence
 $1\frac{1}{3}$ cup buttermilk

3. From the list of ingredients below, what quantity of each ingredient would you need to make a fourth of the original recipe?

Chocolate cake: ingredients

$\frac{1}{2}$ cups all-purpose flour
 1 tablespoon baking soda
 1 pinch salt
 $\frac{2}{3}$ cup unsalted butter
 $\frac{2}{4}$ cup chopped walnuts

1 cup white sugar
 $\frac{1}{3}$ cup light brown sugar
 4 eggs
 20 grams of chocolate
 $2\frac{1}{2}$ cup buttermilk

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From the list of ingredients below, what quantity of each ingredient would you need to make a fourth of the original recipe?

Banana cake: ingredients

$2\frac{1}{2}$ cups all-purpose flour
1 tablespoon baking soda
1 pinch salt

$\frac{1}{2}$ cup unsalted butter

$\frac{1}{2}$ cup chopped walnuts

1 cup white sugar

$\frac{3}{4}$ cup light brown sugar

2 eggs

4 ripe bananas, mashed

$1\frac{1}{3}$ cup buttermilk

The original recipe calls for $2\frac{1}{2}$ cups all-purpose flour. So if you want to make a fourth of $2\frac{1}{2}$ cups all-purpose flour, divide $2\frac{1}{2}$ by 4.

$$\begin{aligned} 2\frac{1}{2} \div 4 &= 2\frac{1}{2} \div \frac{4}{1} = 2\frac{1}{2} \times \frac{1}{4} = \frac{(2 \times 2 + 1)}{2} \times \frac{1}{4} = \frac{5}{2} \times \frac{1}{4} \\ &= \frac{5 \times 1}{2 \times 4} = \frac{5}{8} \end{aligned}$$

Therefore, you'll need $\frac{5}{8}$ cups all-purpose flour to make a fourth of the original recipe.

As you can see, we have to divide all the quantities by 4, which means to multiply them by $\frac{1}{4}$.

So, the ingredients for a fourth of the original recipe of banana cake is :

$\frac{5}{8}$ cups all-purpose flour

$\frac{1}{4}$ cup white sugar

$\frac{1}{4}$ tablespoon baking soda

$\frac{3}{16}$ cup light brown sugar

$\frac{1}{4}$ pinch salt

$\frac{1}{2}$ eggs

$\frac{1}{8}$ cup unsalted butter

1 ripe bananas, mashed

$\frac{1}{8}$ cup chopped walnuts

$\frac{1}{3}$ cup buttermilk