

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. Yesterday, Peter brought 50 boxes of vegetable oil to be distributed at a family reunion. He gave each person $\frac{1}{2}$ a box of vegetable oil. How many people were at the family reunion?
3. The children's playground is opened every day for $8\frac{1}{4}$ hours during the day. There are 5 cleaners and they clean the playground on shifts. If each shift is $2\frac{1}{4}$ hours, how many shifts are there per day?
4. Clovis is a baker and he just got a very big contract to supply cakes to various bakeries in the city. He has $15\frac{1}{2}$ cups of flour. This is just $\frac{3}{4}$ of the number of cups he needs to bake the cakes. How many cups does he need?
5. Tess is left with just $7\frac{1}{2}$ days to complete her internship report. If it usually takes her $\frac{1}{2}$ a day to write and edit a page, how many pages can she write in the number of days she has left?

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

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

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|--------------------------------------|-------------------------------------|
| $\frac{5}{8}$ cups all-purpose flour | $\frac{1}{4}$ cup white sugar |
| $\frac{1}{4}$ tablespoon baking soda | $\frac{3}{8}$ 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 |

2. So, there were 100 people at the reunion.
3. So, there are $3\frac{2}{3}$ shifts per day.
4. So, he needs $20\frac{2}{3}$ cups of flour.
5. So, she can write 15 pages in the number of days she has left.