

Using Mixed Numbers

You might remember from elementary school that a mixed number is a way of writing fractions so that you state the number of “wholes” and then the fractional part after. For example:

When multiplying and dividing fractions, we can't really use mixed numbers very easily. The problem with mixed numbers is that they are, well, mixed. When you multiply, you'll have a hard time figuring out what to multiply because there are two parts.

To multiply or divide fractions, it is sometimes easier to leave them as “pure” or “improper” fractions (although you can multiply with a picture – see the next page). In the space below, we'll review how to change between mixed numbers and fractions.

Problems – complete your work on a separate sheet of paper.

1. A painter is painting a wall with three cans of paint. She discovers that if she uses two and a half cans of paint, she can paint two-thirds of the wall. How many cans of paint would she need to paint the entire wall?

2. The length of the flag of British Columbia is $1\frac{2}{3}$

times its width.

a) What is the length of a flag that is 90 cm wide?

b) What is the width of a flag that is 120 cm long?



3. Three fourths of a can of apple juice fills six glasses. How many glasses will a full can fill? Draw a diagram to show your answer.

4.

Explore the Math

How can you multiply two improper fractions or mixed numbers?

1. The diagram shows a way to model the multiplication $1\frac{1}{2} \times 1\frac{1}{2}$.

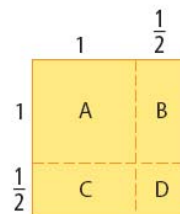
a) How could you determine the area of each section of the large square?

b) What is the area of each section?

c) How could you use the areas of each section to determine the total area of the large square?

d) What is the total area of the large square? Express the total area as a mixed number in lowest terms.

e) Copy and complete the multiplication statement $1\frac{1}{2} \times 1\frac{1}{2} = \blacksquare$.



5. Use the above method to multiply the following. Then check your answers by multiplying with improper fractions.

a) $2\frac{2}{3} \times 1\frac{1}{2}$

b) $1\frac{1}{5} \times 2\frac{1}{6}$

6. Two thirds of the land on a farm is used for grazing beef cattle. The rest of the land is used to grow crops. Half of the land for crops is used to grow corn. What fraction of the land on the farm is used to grow corn?

7. Pedro's CDs are stored in three full racks of different sizes. The small rack holds half as many CDs as the medium rack. The medium rack holds half as many CDs as the large rack. There are 224 CDs altogether. How many are in each rack?