



# Multiplying with Fractions



What does it mean to multiply by a fraction?

To find part of a number!

## I. Multiplying Fractions by Whole Numbers

Ex 1:  $\frac{1}{6} \times 12 = \frac{1}{6}$  of 12 = 2

Ex 2:  $5 \times \frac{3}{5} =$

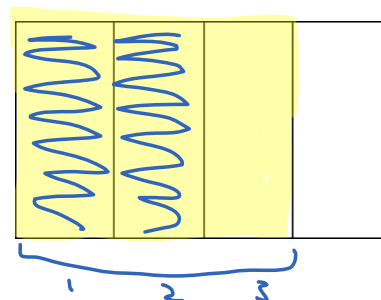
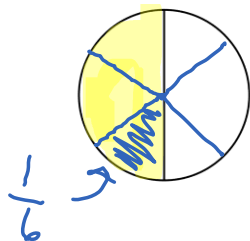
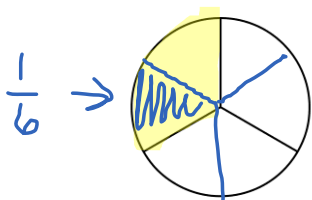
$\frac{3}{5} + \frac{3}{5} + \frac{3}{5} + \frac{3}{5} + \frac{3}{5} = \frac{15}{5} = 3$

## II. Multiplying Fractions by Fractions

Ex 3:  $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

Ex 4:  $\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$

Ex 5:  $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$



How do we complete these problems without using figures?

Ex 1:  $\frac{1}{6} \times 12 =$   
 $\frac{1}{6} \times \frac{12}{1} = \frac{12}{6} = 2$

Ex 2:  $5 \times \frac{3}{5} =$   
 $\frac{5}{1} \times \frac{3}{5} = \frac{15}{5} = 3$

Now you try! Write your answers in simplest form!

1)  $\frac{5}{6} \times 12 =$   
 $\frac{5}{6} \times \frac{12}{1} = \frac{60}{6} = 10$

2)  $6 \times \frac{3}{4} =$   
 $\frac{6}{1} \times \frac{3}{4} = \frac{18}{4} = 4\frac{1}{2}$

3)  $\frac{2}{7} \times 14 =$   
 $\frac{2}{7} \times \frac{14}{1} = \frac{28}{7} = 4$

Now you try! Write your answers in simplest form!

1)  $\frac{5}{6} \times \frac{2}{3} =$

$$\frac{5}{6} \times \frac{2}{3} = \frac{10}{18} = \frac{5}{9}$$

2)  $\frac{7}{10} \times \frac{3}{4} =$

$$\frac{7}{10} \times \frac{3}{4} = \frac{21}{40}$$

3)  $\frac{15}{16} \times \frac{12}{25} =$

$$\frac{15}{16} \times \frac{12}{25} = \frac{180}{400}$$

$$\frac{180 \div 2}{400 \div 2} = \frac{90}{200} = \frac{90 \div 2}{200 \div 2} = \frac{45}{100} = \frac{45 \div 5}{100 \div 5} = \frac{9}{20}$$

### III. Multiplying with Mixed Numbers

How do we multiply with mixed numbers? Simply convert them into improper fractions! Don't forget to put your answers in simplest form!!!

Ex:  $3\frac{1}{2} \times \frac{2}{5} =$

$$3\frac{1}{2} \times \frac{2}{5} = \frac{7}{2} \times \frac{2}{5} = \frac{7}{5} = 1\frac{2}{5}$$

Ex:  $\frac{1}{7} \times 4\frac{2}{3} =$

$$\frac{1}{7} \times 4\frac{2}{3} = \frac{1}{7} \times \frac{14}{3} = \frac{14}{21} = \frac{2}{3}$$

Ex:  $2\frac{1}{4} \times 1\frac{1}{9} =$

$$2\frac{1}{4} \times 1\frac{1}{9} = \frac{9}{4} \times \frac{10}{9} = \frac{10}{4} = \frac{5}{2} = 2\frac{1}{2}$$

Now you try! Write your answers in simplest form!

1)  $1\frac{5}{6} \times \frac{3}{11} =$

$$1\frac{5}{6} \times \frac{3}{11} = \frac{11}{6} \times \frac{3}{11} = \frac{33}{66} = \frac{1}{2}$$

2)  $\frac{2}{7} \times 5\frac{3}{5} =$

$$\frac{2}{7} \times 5\frac{3}{5} = \frac{2}{7} \times \frac{28}{5} = \frac{56}{35} = \frac{8}{5} = 1\frac{3}{5}$$

3)  $3\frac{5}{9} \times \frac{1}{8} =$

$$3\frac{5}{9} \times \frac{1}{8} = \frac{32}{9} \times \frac{1}{8} = \frac{32}{72} = \frac{4}{9}$$