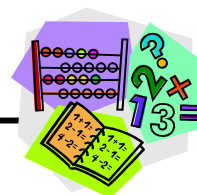


Multiplying Fractions



How well do you know your multiplication facts?

Review [Multiplying Whole Numbers](#)

To multiply fractions:

- Multiply the numerators together.
- Multiply the denominators together.
- Reduce to lowest form.

Examples

Multiply the numerators

$$\text{A) } \frac{3}{4} \times \frac{2}{3} = \frac{3 \times 2}{4 \times 3} = \frac{6}{12} \Rightarrow \frac{6 \div 6}{12 \div 6} = \frac{1}{2}$$

Multiply the denominators

Reduce to lowest form

$$\text{B) } \frac{4}{5} \times \frac{5}{7} = \frac{4 \times 5}{5 \times 7} = \frac{20}{35} \Rightarrow \frac{20 \div 5}{35 \div 5} = \frac{4}{7}$$

- C) Paige was reading a thick book. She was $\frac{3}{4}$ of the way through the book. If she read $\frac{1}{2}$ of the remaining pages in one night, how much would she have left to read?

To find $\frac{1}{2}$ of $\frac{1}{4}$ you have to multiply.

$$\frac{1}{2} \times \frac{1}{4} = \frac{1 \times 1}{2 \times 4} = \frac{1}{8}$$

Paige has $\frac{1}{8}$ of her book left to read.

Multiplying Mixed Numbers

Mixed numbers can be multiplied using the method below.

Examples

A) $2\frac{1}{3} \times 3\frac{3}{4}$

Procedure	Example
Convert each mixed number to an improper fraction.	$2\frac{1}{3} = \frac{7}{3}$ $3\frac{3}{4} = \frac{15}{4}$
Multiply the numerators.	$15 \times 7 = 105$
Multiply the denominators.	$3 \times 4 = 12$
Convert the fraction to a mixed number by dividing the denominator into the numerator and reduce to lowest terms.	$\frac{105}{12} = 12\overline{)105}$ $= 6\frac{1}{4}$

- B) Nora saw jeans on sale for $\frac{1}{3}$ off the regular price of \$24. How much will Nora save if she purchases the jeans?

Find $\frac{1}{3}$ of \$24

$$\frac{1}{3} \times \frac{24}{1} = \frac{1 \times 24}{3 \times 1} = \frac{24}{3}$$

$24 \div 3 = 8$. Nora will save \$8.00.



- C) Nakita has a novel to read for her English class. It has 175 pages. She must have $\frac{2}{3}$ of the book read by the end of next week. How many pages must Nakita read?

Find $\frac{2}{3}$ of 175

$$\frac{2}{3} \times \frac{175}{1} = \frac{350}{3} = 116.66 = 117$$

Nakita has 117 pages to read.

Notice that the answer is rounded to the nearest whole number.



Practice: Multiplying Fractions

1. In your notebook, answer the following questions using the pencil/paper method. Reduce to lowest form.

a) $\frac{1}{2} \times \frac{1}{4} =$

b) $\frac{3}{4} \times \frac{1}{3} =$

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

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

e) $\frac{3}{5} \times \frac{4}{9} =$

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

g) $\frac{6}{7} \times \frac{1}{5} =$

h) $\frac{2}{4} \times \frac{7}{8} =$

i) $\frac{9}{10} \times \frac{3}{6} =$

2. Solve the following:

a) $1\frac{1}{4} \times 3\frac{2}{3}$

b) $4\frac{2}{5} \times 2\frac{1}{2}$

c) $2\frac{3}{4} \times 3\frac{4}{5}$

d) $3\frac{4}{5} \times 2\frac{1}{3}$

e) $4\frac{1}{2} \times 3\frac{3}{4}$

3. Samuel is a carpenter and his first job of the day is to install hinges and knobs on an antique dresser that a client has purchased. Solve the following calculations using diagrams or other strategies. Compare your solution with a classmate.

a) The wood the dresser is made of is $\frac{3}{4}$ cm thick. Samuel must screw a hinge into the halfway point of the wood. What is $\frac{1}{2}$ of $\frac{3}{4}$?

b) The length of one of the door handles is $\frac{4}{5}$ cm. What is $\frac{1}{3}$ of the way across the handle. What is $\frac{1}{3}$ of $\frac{4}{5}$?

c) The width of the dresser's mirror frame is $6\frac{4}{5}$ cm. Samuel must install a decorative metal bar $2\frac{1}{3}$ of the way in from the outside edge of the frame. What is $2\frac{1}{3}$ of $6\frac{4}{5}$?

4. Amanda is adding topsoil to the garden. In total, Amanda has to haul $5\frac{1}{2}$ wheelbarrows of soil to the garden and has completed $\frac{3}{4}$ of the job. How many of the total number of wheelbarrows needed has Amanda hauled?

Calculate $\frac{3}{4}$ of $5\frac{1}{2}$.

5. Fill in the missing blanks in the chart below. The first two have been done for you.

	Multiply numerators	Multiply denominators	Fraction	Round to appropriate terms
$\frac{3}{4}$ of \$26.50	$3 \times \$26.50$ $= \$79.50$	$4 \times 1 = 4$	$\frac{\$79.50}{4}$	\$19.88
$\frac{5}{6}$ of 197	5×197 $= 985$	$6 \times 1 = 6$	$\frac{985}{6}$	164.17
$\frac{1}{2}$ of 463				
$\frac{1}{2}$ of \$19.80				
$\frac{2}{3}$ of \$25.12				
$\frac{4}{7}$ of 281				
$\frac{1}{3}$ of \$14.95				
$\frac{5}{8}$ of \$32.99				
$\frac{1}{3}$ of 126				
$\frac{9}{10}$ of \$45.68				

6. Casey works for a temp agency and accepts different jobs each day. Each job requires a different number of hours and each job pays a different daily rate.

Complete the chart to calculate how much money Casey made each day. Round each answer to the nearest hundredth (cent). The first one has been done for you.

Day	Daily Rate	Time Worked	Solution	Rounded to nearest hundredth
Monday	\$186.50	$\frac{2}{3}$ of the day	124.33333 ...	\$124.33
Tuesday	\$75.00	$\frac{1}{3}$ of the day		
Wednesday	\$86.85	$\frac{1}{4}$ of the day		
Thursday	\$65.15	$\frac{3}{4}$ of the day		
Friday	\$57.28	$\frac{1}{2}$ of the day		

Write the solution in complete sentences.

- How much time did Casey work in total for the week?
- How much money did Casey make in total for the week?