

# Multiply fractions by integers



1 Complete the calculations.

a)

$$\frac{2}{7} \times 2 = \square$$

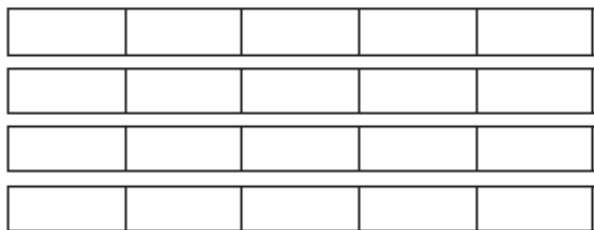


b)



$$3 \times \frac{3}{10} = \square$$

2 a) Shade the bar models to show  $\frac{2}{5} \times 4$



b) Complete the multiplication.

$$\frac{2}{5} \times 4 = \square$$



3 Complete the calculations.

a)  $\frac{1}{3} \times 1 = \square$

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

$$\frac{1}{3} \times 2 = \square$$

$$\frac{3}{4} \times 2 = \square$$

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

$$\frac{3}{4} \times 3 = \square$$

$$\frac{1}{3} \times 4 = \square$$

$$\frac{3}{4} \times 4 = \square$$

$$\frac{1}{3} \times 5 = \square$$

$$\frac{3}{4} \times 5 = \square$$

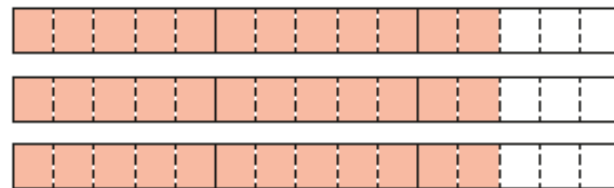
$$\frac{1}{3} \times 6 = \square$$

$$\frac{3}{4} \times 6 = \square$$

What patterns do you notice?

4 Complete the multiplication.

$$2\frac{2}{5} \times 3 = \square$$



What method did you use? Is there a different method you could have used?



5 Match the calculations.

$$\frac{2}{3} + \frac{2}{3}$$

$$\frac{1}{4} \times 24$$

$$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$$

$$\frac{5}{12} \times 4$$

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

$$\frac{1}{2} \times 6$$

$$18 \times \frac{1}{4}$$

$$\frac{1}{6} \times 10$$

$$12 \times \frac{1}{2}$$

$$\frac{1}{3} \times 4$$

6 Write each answer as a mixed number in its simplest form.

a)  $1\frac{1}{5} \times 2 =$

d)  $2\frac{2}{5} \times 5 =$

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

e)  $7 \times 3\frac{1}{2} =$

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

f)  $\frac{11}{15} \times 7 =$

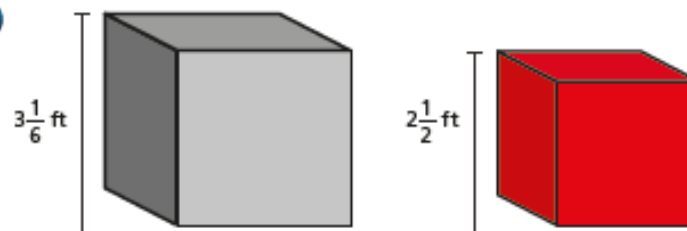
7 Fill in the missing numbers.

a)  $2\frac{\square}{7} \times 3 = 6\frac{6}{7}$

b)  $2\frac{\square}{8} \times 3 = 7\frac{1}{2}$

8 Tommy's dog eats  $3\frac{1}{2}$  tins of food a week.  
How many tins does she eat in a year?

9



Jack builds a tower using grey blocks.

Alex builds a tower using red blocks.

The towers are exactly the same height.

How many blocks could they each have used?

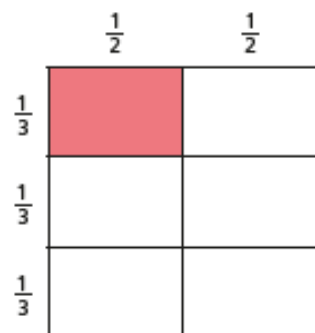
---

---



## Multiply fractions by fractions

- 1 Dexter works out  $\frac{1}{2} \times \frac{1}{3}$  using a grid method.



Explain how this shows  $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

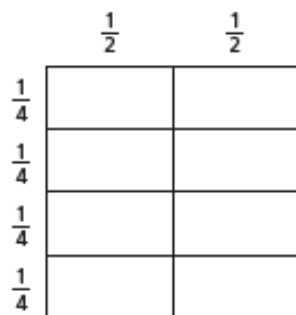
---



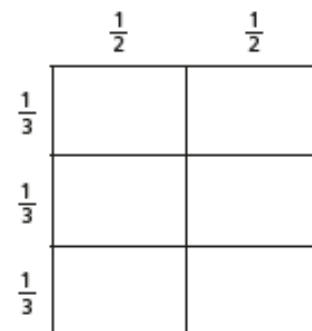
---

- 2 Shade the diagrams to show the fraction multiplications.  
Complete the multiplications.

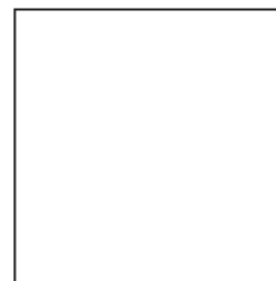
a)  $\frac{1}{2} \times \frac{1}{4} = \square$



b)  $\frac{1}{2} \times \frac{2}{3} = \square$



- 3 a) Divide the square to show that  $\frac{2}{3} \times \frac{3}{4}$  is equal to  $\frac{6}{12}$



- b) Mo says  $\frac{2}{3} \times \frac{3}{4}$  is equal to  $\frac{1}{2}$

Is Mo correct? \_\_\_\_\_

Explain your answer.

---



---

4 Complete the calculations.

a)  $\frac{1}{4} \times \frac{1}{5} = \square$

e)  $\frac{3}{4} \times \frac{1}{5} = \square$

b)  $\frac{1}{5} \times \frac{1}{6} = \square$

f)  $\frac{2}{5} \times \frac{5}{6} = \square$


c)  $\square = \frac{1}{7} \times \frac{1}{8}$


g)  $\frac{5}{7} \times \frac{5}{8} = \square$

d)  $\frac{1}{8} \times \frac{1}{9} \times \frac{1}{10} = \square$

h)  $\frac{3}{8} \times \frac{2}{9} \times \frac{3}{10} = \square$

5 Use the diagram to complete the calculations.

a)  $\frac{1}{3}$  of  $\frac{1}{4} = \square$  

b)  $\frac{2}{3}$  of  $\frac{3}{4} = \square$  

c) What do you notice about your answers?  
Talk to your partner.

6 Fill in the missing numbers.

a)  $\frac{1}{10} = \frac{1}{2} \times \frac{1}{\square}$

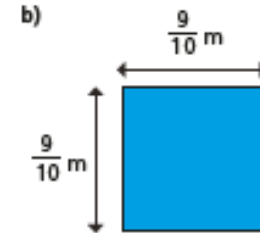
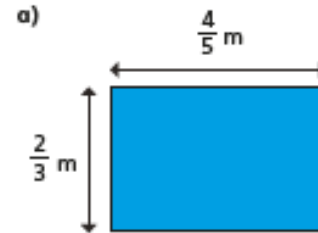
b)  $\frac{1}{5} \times \frac{\square}{3} = \frac{2}{15}$

7 Fill in the missing numbers.

a)  $\frac{1}{10} = \frac{\square}{4} \times \frac{\square}{5}$

b)  $\frac{1}{4} = \frac{\square}{4} \times \frac{\square}{5}$

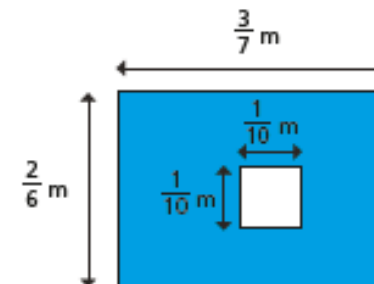
8 Calculate the area of the shapes.



Area =  $\square$  m<sup>2</sup>

Area =  $\square$  m<sup>2</sup>

9 Work out the area of the shaded part.



## Divide fractions by integers (2)

1

$$\frac{4}{5} \div 2 \quad \frac{4}{5} \div 3$$

a) Write two things that are the same about the calculations.

---



---



---

b) Write one thing that is different about the calculations.

---

c) Draw a diagram to help you work out the answer to  $\frac{4}{5} \div 2$



d) Draw a diagram to help you work out the answer to  $\frac{4}{5} \div 3$



2 Complete the divisions using the diagrams to help you.

a)  $\frac{1}{3} \div 2 =$

b)  $\frac{1}{3} \div 3 =$

c)  $\frac{2}{3} \div 3 =$

3  $\frac{3}{4}$  of a kilogram of rice is divided equally between two bowls.



How much rice is in each bowl?

4 Work out the divisions.

a)  $\frac{1}{5} \div 7 = \square$

f)  $\square = \frac{5}{6} \div 12$

b)  $\square = \frac{1}{6} \div 3$

g)  $\frac{8}{3} \div 7 = \square$

c)  $\frac{1}{4} \div 9 = \square$

h)  $\square = \frac{19}{20} \div 5$

d)  $\square = \frac{1}{7} \div 6$

i)  $\frac{1}{100} \div 25 = \square$

e)  $\frac{4}{9} \div 7 = \square$

j)  $\square = \frac{45}{50} \div 20$

5 Write <, > or = to complete each statement.

a)  $\frac{1}{3} \div 5 \bigcirc \frac{1}{5} \div 3$

b)  $\frac{1}{3} \div 3 \bigcirc \frac{1}{5} \div 5$

c)  $\frac{3}{5} \div 5 \bigcirc \frac{3}{5} \div 3$

6 There are some cones in the PE shed.

Classes 1, 2 and 3 share them equally.

- Class 1 put theirs into 4 equal piles.
- Class 2 put theirs into 5 equal piles.
- Class 3 put theirs into 11 equal piles.



What fraction of the whole number of cones is in each pile?

	Fraction in each pile
Class 1	
Class 2	
Class 3	

7 a) Which of these statements are true? Tick your answers.

$\frac{1}{2} \div 2$  is equal to  $\frac{1}{2} \times \frac{1}{2}$

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

$\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3}$

$\frac{1}{2} \div 5 = \frac{1}{2} \times \frac{1}{5}$

b) What do you notice?

Is it only true for halves?

Does it work for non-unit fractions?

Talk to a partner.

## Fractions of an amount

1



a) Shade  $\frac{1}{5}$  of the bar model.

b) What is  $\frac{1}{5}$  of 20?

2

Use your times tables knowledge to solve the calculations.

a)  $\frac{1}{3}$  of 12 =

d)  $\frac{1}{10}$  of 80 cm =

b)  $\frac{1}{4}$  of £20 =

e)  $\frac{1}{12}$  of 60 =

c)  $\frac{1}{5}$  of 35 m =

f)  $\frac{1}{7}$  of 84 kg =

Now use your answers to solve these calculations.

a)  $\frac{2}{3}$  of 12 =

d)  $\frac{7}{10}$  of 80 cm =

b)  $\frac{3}{4}$  of £20 =

e)  $\frac{11}{12}$  of 60 =

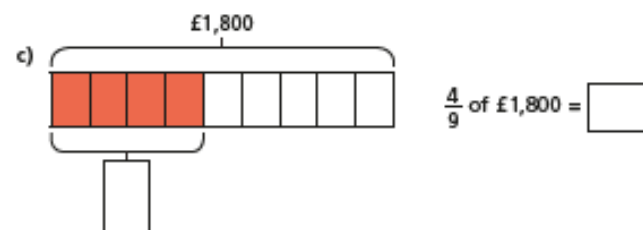
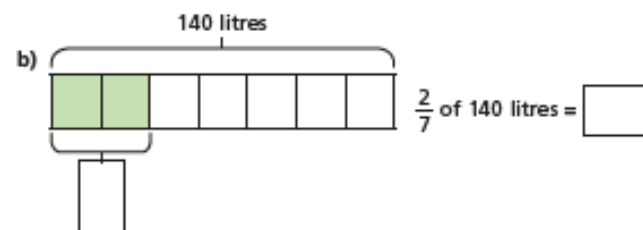
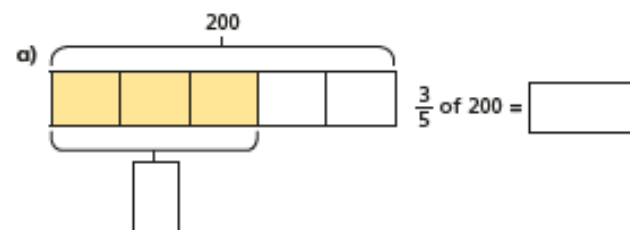
c)  $\frac{3}{5}$  of 35 m =

f)  $\frac{6}{7}$  of 84 kg =



3

Calculate the missing values.

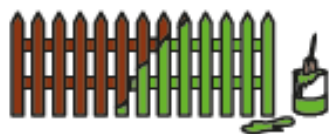


- 4 a) In a school of 480 pupils,  $\frac{2}{3}$  are juniors.  
How many juniors are in the school?

- b) A factory makes 256 cars.  
 $\frac{3}{8}$  are electric cars.  
How many electric cars does the factory make?

- c) Brett uses  $\frac{2}{5}$  of his £180 savings to buy a train ticket.  
How much of his savings does he have left?

5



- Alex has 288 m of fence to paint.  
She paints  $\frac{3}{12}$  of the whole fence on Monday. She then paints  $\frac{1}{2}$  of what is left on Tuesday.  
How much fence does she have left to paint?



- 6 Fill in the missing numbers.

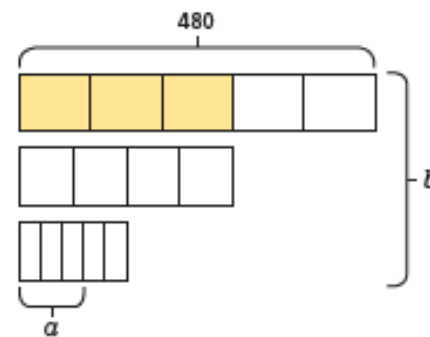
a)  $\frac{\square}{10}$  of \$500 = \$150

c)  $42 = \frac{\square}{100}$  of 700

b)  $\frac{\square}{4}$  of 100 kg = 75 kg

d)  $450 = \frac{\square}{20}$  of 3,000

- 7 Find the values of  $a$  and  $b$ .



$a =$

$b =$