

Multiply unit fractions by an integer

1 Complete the calculations.

Use the bar models to help you.



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \square$$

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



$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \square$$

$$4 \times \frac{1}{7} = \square$$



$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \square$$

$$5 \times \frac{1}{8} = \square$$



$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \square$$

$$7 \times \frac{1}{10} = \square$$



2 Complete the multiplications.

a) $3 \times \frac{1}{8} = \square$

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

b) $3 \times \frac{1}{10} = \square$

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

c) $\frac{1}{8} \times 5 = \square$

g) $8 \times \frac{1}{11} = \square$

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

h) $\frac{1}{11} \times 10 = \square$

3 Match the addition to the equivalent multiplication.

$$\frac{1}{3} + \frac{1}{3}$$

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

$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

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

$$\frac{1}{5} + \frac{1}{5}$$

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

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

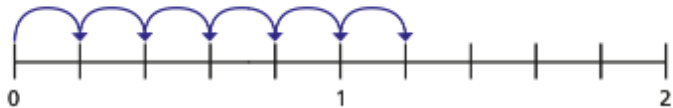
$$2 \times \frac{1}{3}$$

- 4 A pizza is cut into sixths.
Jack eats five of the slices.
Write a multiplication to represent this.

$$\square \times \square = \square$$

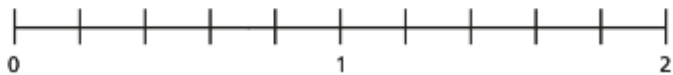
- 5 Complete the multiplications.
Use the number lines to help you.
Give each answer as an improper fraction and as a mixed number.

a)



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

b)



$$9 \times \frac{1}{5} = \square = \square$$



- 6 Complete the multiplications.

a) $11 \times \frac{1}{10} = \square = \square$

b) $11 \times \frac{1}{9} = \square = \square$

c) $\frac{1}{8} \times 11 = \square = \square$

d) $11 \times \frac{1}{7} = \square = \square$

e) $11 \times \frac{1}{6} = \square = \square$

What do you notice?

Does this pattern continue?

- 7 Complete the calculations.

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

e) $\frac{1}{8} \times \square = 1 \frac{3}{8}$

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

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

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

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

d) $\frac{1}{7} \times \square = 1 \frac{3}{7}$

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



Multiply non-unit fractions by an integer

1 Complete the calculations.
Use the bar models to help you.



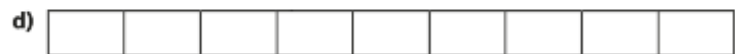
$$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \square \qquad 3 \times \frac{2}{7} = \square$$



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



$$\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} = \square \qquad 4 \times \frac{2}{9} = \square$$



$$\frac{4}{9} + \frac{4}{9} = \square \qquad 2 \times \frac{4}{9} = \square$$

What do you notice about parts c) and d)? Talk to a partner.



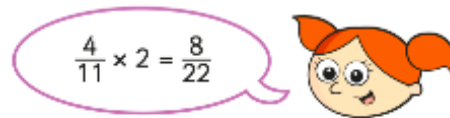
2 Complete the multiplications.

a) $2 \times \frac{3}{7} = \square$ d) $5 \times \frac{2}{11} = \square$

b) $3 \times \frac{3}{11} = \square$ e) $\frac{2}{15} \times 7 = \square$

c) $\frac{2}{11} \times 4 = \square$ f) $\frac{7}{15} \times 2 = \square$

3



Explain the mistake that Alex has made.

4

A cat eats $\frac{2}{15}$ of a bag of biscuits a day.
What fraction of the bag does the cat eat in 4 days?



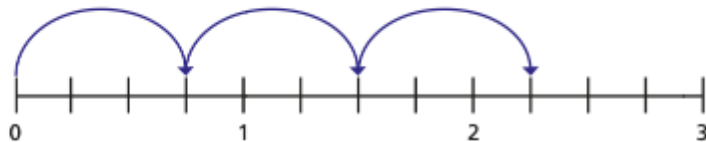
The cat eats \square of the bag in 4 days.

5 Complete the multiplications.

Use the number lines to help you.

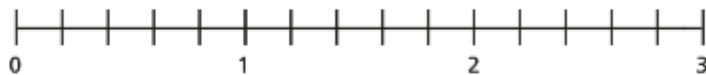
Give each answer as an improper fraction and as a mixed number.

a)



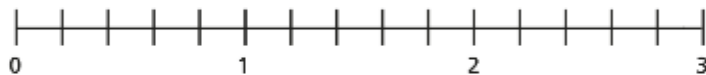
$$3 \times \frac{3}{4} = \boxed{} = \boxed{}$$

b)



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

c)



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



6 Complete the multiplications.

a) $5 \times \frac{2}{3} = \boxed{} = \boxed{}$

b) $4 \times \frac{4}{5} = \boxed{} = \boxed{}$

c) $\frac{2}{7} \times 11 = \boxed{} = \boxed{}$

d) $4 \times \frac{7}{9} = \boxed{} = \boxed{}$

e) $17 \times \frac{2}{11} = \boxed{} = \boxed{}$

f) Describe the pattern you can see in the answers.

g) What could the next multiplication in the pattern be?

Write two possible options.

7 Here are some digit cards.



Use the digit cards to complete the multiplication.

$$\boxed{} \times \frac{\boxed{}}{8} = \frac{15}{8} = \boxed{} \frac{\boxed{}}{8}$$



Multiply mixed numbers by integers

1 Complete the calculations.

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

$4 \times 1 = \square$

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

$\square + \square = \square$

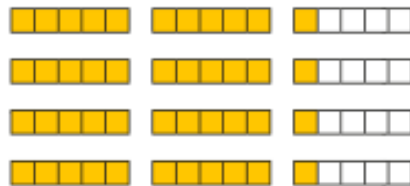


b) $4 \times 2\frac{1}{5}$

$\square \times 2 = \square$

$4 \times \square = \square$

$\square + \square = \square$

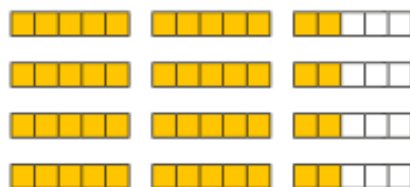


c) $4 \times 2\frac{2}{5}$

$\square \times \square = \square$

$4 \times \square = \square = \square$

$\square + \square = \square$

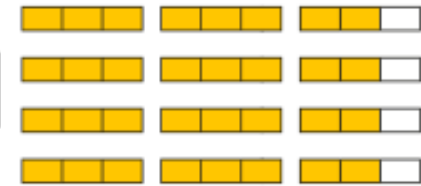


d) $4 \times 2\frac{2}{3}$

$\square \times \square = \square$

$\square \times \square = \square = \square$

$\square + \square = \square$



2 Complete the multiplications.

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

d) $4 \times 6\frac{3}{19} = \square$

b) $2 \times 12\frac{2}{11} = \square$

e) $2\frac{2}{25} \times 12 = \square$

c) $6\frac{2}{11} \times 4 = \square$

f) $3\frac{1}{15} \times 8 = \square$

What is the same and what is different about your answers?

3 One bag of potatoes weighs $1\frac{3}{4}$ kg.

How much do 5 bags of potatoes weigh?



\square kg

4 Complete the calculations.

a) $5 \times 2\frac{2}{3} = 10 + \frac{10}{3} = \square$

b) $4\frac{3}{7} \times 5 = 20 + \square = \square$

c) $8 \times 2\frac{5}{12} = \square + \square = \square$

d) $7 \times 3\frac{1}{5} = \square + \square = \square$

e) $4\frac{2}{9} \times 8 = \square + \square = \square$

f) $11 \times 4\frac{3}{10} = \square + \square = \square$

5

$5 \times 3\frac{2}{11}$ is equal to
 $3 \times 5\frac{2}{11}$



Do you agree with Ron? _____

Explain why.

6 Eva drinks $3\frac{1}{3}$ litres of water a day.

How many litres of water does she drink in a week?

7 Here is a recipe for a birthday cake.



Butter $1\frac{3}{8}$ kg
Sugar $1\frac{5}{16}$ kg
Self-raising flour $2\frac{1}{4}$ kg
6 eggs

a) How much flour is needed for 3 birthday cakes?

 kg

b) Dora makes 4 birthday cakes.

How much more butter does she use than sugar?

 kg

Fractions of an amount

1 Annie and Mo are finding fractions of amounts.

a) Annie is trying to find $\frac{1}{5}$ of 45

She draws this bar model.

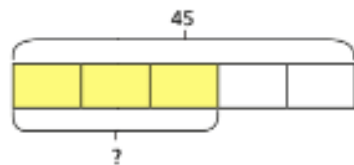


How does the bar model represent the calculation?

What is $\frac{1}{5}$ of 45?



b) Mo is trying to find $\frac{3}{5}$ of 45



How does the bar model represent the calculation?

What is $\frac{3}{5}$ of 45?



c) What is the same and what is different about Mo and Annie's questions?



2 Complete the calculations.

a) $\frac{1}{3}$ of 27 = b) $\frac{1}{3}$ of 72 = c) $\frac{1}{3}$ of 90 =

$\frac{2}{3}$ of 27 = $\frac{1}{6}$ of 72 = $\frac{2}{6}$ of 90 =

$\frac{3}{3}$ of 27 = $\frac{1}{12}$ of 72 = $\frac{3}{9}$ of 90 =

What patterns do you notice?

3 Match the calculations to the correct amounts.

$\frac{5}{8}$ of 48

32

$\frac{2}{3}$ of 48

40

$\frac{5}{6}$ of 48

30

$\frac{3}{4}$ of 48

36

- 4 Write $<$, $>$ or $=$ to compare the calculations.

a) $\frac{5}{7}$ of 56 $\frac{5}{8}$ of 56

c) $\frac{2}{3}$ of 63 $\frac{5}{8}$ of 64

b) $\frac{4}{7}$ of 56 $\frac{5}{8}$ of 56

d) $\frac{7}{10}$ of 350 $\frac{5}{7}$ of 350

- 5 165 children and adults go on a school trip.
Two thirds of the people are children.

a) How many adults are on the school trip?

b) $\frac{3}{5}$ of the children are boys.

How many boys are on the school trip?

c) $\frac{7}{10}$ of the children have an apple for lunch.

How many children do **not** have an apple for lunch?

- 6 Tick the odd one out.

$\frac{3}{4}$ of 80





$\frac{3}{8}$ of 160

$\frac{2}{3}$ of 90

$\frac{3}{4}$ of 100

Explain your choice.

- 7 320 people were asked about their favourite flavour of ice cream.
Here is a pictogram showing the results.

vanilla	
strawberry	
chocolate	
mint choc chip	

a) How many people chose mint choc chip?

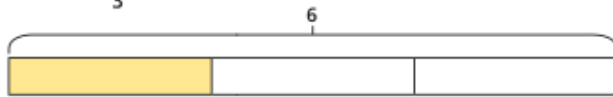
b) How many more people chose vanilla than chocolate?

Fractions as operators

- 1 a) Work out $\frac{1}{3} \times 6$

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

- b) Work out $\frac{1}{3}$ of 6



$$\frac{1}{3} \text{ of } 6 = \square \div \square = \square$$

- c) What is the same about these calculations?

- d) Work out $\frac{2}{3}$ of 6

$$\frac{2}{3} \text{ of } 6 = \square \div \square \times 2 = \square$$

- e) Work out $\frac{2}{3} \times 6$

$$\frac{2}{3} \times 6 = \square = \square$$



- 2 Complete the calculations.

a) $\frac{1}{3} \times 12 = \square$

$\frac{1}{3}$ of 12 = \square

b) $12 \times \frac{1}{4} = \square$

$\frac{1}{4}$ of 12 = \square

c) $12 \times \frac{2}{3} = \square$

$\frac{2}{3}$ of 12 = \square

d) $\frac{3}{4} \times 12 = \square$

$\frac{3}{4}$ of 12 = \square

What do you notice?

- 3 Tick the calculation in each pair that is easier to work out.

a) $\frac{1}{5} \times 7$

$\frac{1}{5}$ of 7

b) $\frac{1}{5} \times 10$

$\frac{1}{5}$ of 10

c) $\frac{3}{5} \times 10$

$\frac{3}{5}$ of 10

d) $\frac{3}{10} \times 5$

$\frac{3}{10}$ of 5

Compare answers with a partner.



4 Complete the calculations.

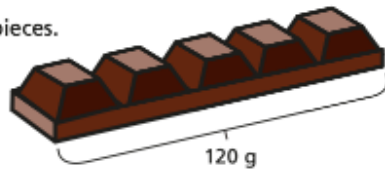
a) $\frac{5}{6} \times 12 = \frac{\square}{\square}$ of 12 = \square

b) $\frac{3}{4} \times 24 = \frac{\square}{\square}$ of 24 = \square

c) $\frac{2}{7} \times \square = \frac{\square}{\square}$ of 28 = \square

d) $\frac{\square}{\square} \times 45 = \frac{4}{5}$ of $\square = \square$

5 A bar of chocolate has 5 equal pieces.
The whole bar weighs 120g.



How much do three pieces weigh?

a) Write two calculations that will give the answer to the problem.

b) Work out the answer.

Three pieces of chocolate weigh

6 Teddy and Annie are working out $\frac{3}{7} \times 42$

a)

I will multiply 42 by $\frac{3}{7}$



Teddy

Use Teddy's method to work out the calculation.

b)



Annie

I will find $\frac{3}{7}$ of 42

Use Annie's method to work out the calculation.

c) Whose method do you prefer? _____

Explain why.

d) When is it easier to find fractions of amounts rather than multiply fractions?

Give some examples for each method.



Multiply unit fractions by an integer

1 Complete the calculations.
Use the bar models to help you.



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5} \qquad 3 \times \frac{1}{5} = \frac{3}{5}$$



$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{4}{7} \qquad 4 \times \frac{1}{7} = \frac{4}{7}$$



$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8} \qquad 5 \times \frac{1}{8} = \frac{5}{8}$$



$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{7}{10} \qquad 7 \times \frac{1}{10} = \frac{7}{10}$$



2 Complete the multiplications.

a) $3 \times \frac{1}{8} = \frac{3}{8}$

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

b) $3 \times \frac{1}{10} = \frac{3}{10}$

f) $\frac{1}{9} \times 8 = \frac{8}{9}$

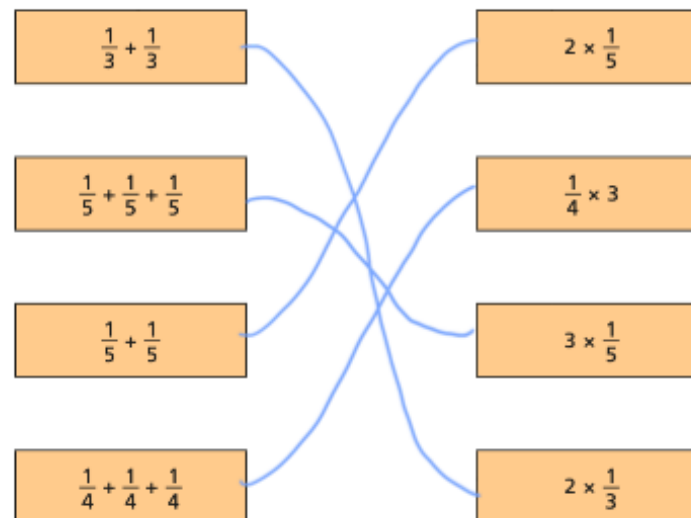
c) $\frac{1}{8} \times 5 = \frac{5}{8}$

g) $8 \times \frac{1}{11} = \frac{8}{11}$

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

h) $\frac{1}{11} \times 10 = \frac{10}{11}$

3 Match the addition to the equivalent multiplication.

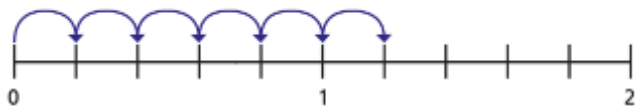


- 4 A pizza is cut into sixths.
Jack eats five of the slices.
Write a multiplication to represent this.

$$\boxed{5} \times \boxed{\frac{1}{6}} = \boxed{\frac{5}{6}}$$

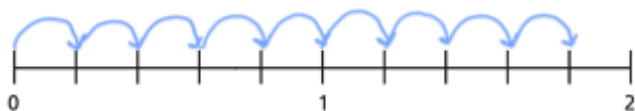
- 5 Complete the multiplications.
Use the number lines to help you.
Give each answer as an improper fraction and as a mixed number.

a)



$$6 \times \frac{1}{5} = \boxed{\frac{6}{5}} = \boxed{1\frac{1}{5}}$$

b)



$$9 \times \frac{1}{5} = \boxed{\frac{9}{5}} = \boxed{1\frac{4}{5}}$$



- 6 Complete the multiplications.

$$\text{a) } 11 \times \frac{1}{10} = \boxed{\frac{11}{10}} = \boxed{1\frac{1}{10}}$$

$$\text{b) } 11 \times \frac{1}{9} = \boxed{\frac{11}{9}} = \boxed{1\frac{2}{9}}$$

$$\text{c) } \frac{1}{8} \times 11 = \boxed{\frac{11}{8}} = \boxed{1\frac{3}{8}}$$

$$\text{d) } 11 \times \frac{1}{7} = \boxed{\frac{11}{7}} = \boxed{1\frac{4}{7}}$$

$$\text{e) } 11 \times \frac{1}{6} = \boxed{\frac{11}{6}} = \boxed{1\frac{5}{6}}$$

What do you notice?
Does this pattern continue?

- 7 Complete the calculations.

$$\text{a) } \boxed{2} \times \frac{1}{3} = \frac{2}{3}$$

$$\text{e) } \frac{1}{8} \times \boxed{11} = 1\frac{3}{8}$$

$$\text{b) } \boxed{3} \times \frac{1}{3} = 1$$

$$\text{f) } \boxed{7} \times \frac{1}{2} = 3\frac{1}{2}$$

$$\text{c) } \boxed{7} \times \frac{1}{7} = 1$$

$$\text{g) } \boxed{10} \times \frac{1}{3} = 3\frac{1}{3}$$

$$\text{d) } \frac{1}{7} \times \boxed{10} = 1\frac{3}{7}$$

$$\text{h) } \frac{1}{4} \times \boxed{13} = 3\frac{1}{4}$$

Multiply non-unit fractions by an integer

1 Complete the calculations.

Use the bar models to help you.



$$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{6}{7}$$

$$3 \times \frac{2}{7} = \frac{6}{7}$$



$$\frac{3}{10} + \frac{3}{10} + \frac{3}{10} = \frac{9}{10}$$

$$3 \times \frac{3}{10} = \frac{9}{10}$$



$$\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} = \frac{8}{9}$$

$$4 \times \frac{2}{9} = \frac{8}{9}$$



$$\frac{4}{9} + \frac{4}{9} = \frac{8}{9}$$

$$2 \times \frac{4}{9} = \frac{8}{9}$$

What do you notice about parts c) and d)? Talk to a partner.



2 Complete the multiplications.

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

d) $5 \times \frac{2}{11} = \frac{10}{11}$

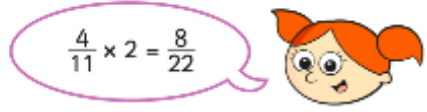
b) $3 \times \frac{3}{11} = \frac{9}{11}$

e) $\frac{2}{15} \times 7 = \frac{14}{15}$

c) $\frac{2}{11} \times 4 = \frac{8}{11}$

f) $\frac{7}{15} \times 2 = \frac{14}{15}$

3



Explain the mistake that Alex has made.

She has multiplied both the numerator and the denominator.
 $\frac{4}{11} \times 2 = \frac{8}{11}$

4

A cat eats $\frac{2}{15}$ of a bag of biscuits a day.

What fraction of the bag does the cat eat in 4 days?



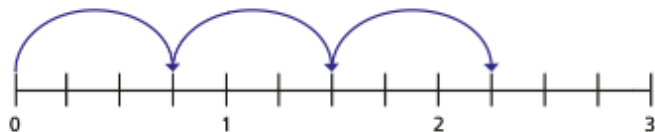
The cat eats $\frac{8}{15}$ of the bag in 4 days.

5 Complete the multiplications.

Use the number lines to help you.

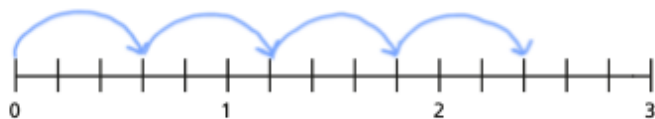
Give each answer as an improper fraction and as a mixed number.

a)



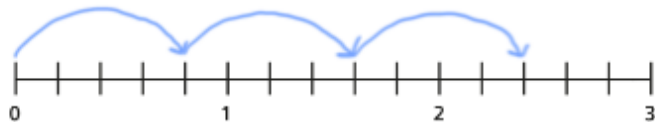
$$3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$$

b)



$$4 \times \frac{3}{5} = \frac{12}{5} = 2\frac{2}{5}$$

c)



$$3 \times \frac{4}{5} = \frac{12}{5} = 2\frac{2}{5}$$



6 Complete the multiplications.

$$\text{a) } 5 \times \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$$

$$\text{b) } 4 \times \frac{4}{5} = \frac{16}{5} = 3\frac{1}{5}$$

$$\text{c) } \frac{2}{7} \times 11 = \frac{22}{7} = 3\frac{1}{7}$$

$$\text{d) } 4 \times \frac{7}{9} = \frac{28}{9} = 3\frac{1}{9}$$

$$\text{e) } 17 \times \frac{2}{11} = \frac{34}{11} = 3\frac{1}{11}$$

f) Describe the pattern you can see in the answers.

g) What could the next multiplication in the pattern be?

Write two possible options.

e.g. $\frac{5}{13} \times 8$
 $10 \times \frac{6}{13}$

7 Here are some digit cards.



Use the digit cards to complete the multiplication.

$$\boxed{5} \times \frac{\boxed{3}}{8} = \frac{15}{8} = \boxed{1} \frac{\boxed{7}}{8}$$



Multiply mixed numbers by integers

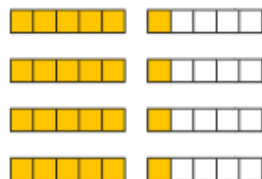
1 Complete the calculations.

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

$4 \times 1 = 4$

$4 \times \frac{1}{5} = \frac{4}{5}$

$4 + \frac{4}{5} = 4\frac{4}{5}$

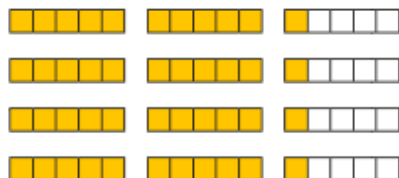


b) $4 \times 2\frac{1}{5}$

$4 \times 2 = 8$

$4 \times \frac{1}{5} = \frac{4}{5}$

$8 + \frac{4}{5} = 8\frac{4}{5}$

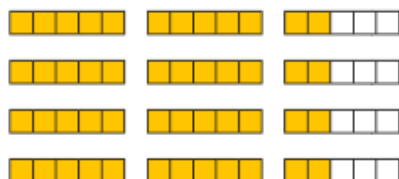


c) $4 \times 2\frac{2}{5}$

$4 \times 2 = 8$

$4 \times \frac{2}{5} = \frac{8}{5} = 1\frac{3}{5}$

$8 + 1\frac{3}{5} = 9\frac{3}{5}$



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

$4 \times 2 = 8$

$4 \times \frac{2}{3} = \frac{8}{3} = 2\frac{2}{3}$

$8 + 2\frac{2}{3} = 10\frac{2}{3}$



2 Complete the multiplications.

a) $3 \times 8\frac{2}{7} = 24\frac{6}{7}$

d) $4 \times 6\frac{3}{19} = 24\frac{12}{19}$

b) $2 \times 12\frac{2}{11} = 24\frac{4}{11}$

e) $2\frac{2}{25} \times 12 = 24\frac{48}{25}$

c) $6\frac{2}{11} \times 4 = 24\frac{8}{11}$

f) $3\frac{1}{15} \times 8 = 24\frac{8}{15}$

What is the same and what is different about your answers?

They all contain 24 wholes but the fraction is different

3 One bag of potatoes weighs $1\frac{3}{4}$ kg.



How much do 5 bags of potatoes weigh?

$8\frac{3}{4}$ kg

4 Complete the calculations.

a) $5 \times 2\frac{2}{3} = 10 + \frac{10}{3} = 13\frac{1}{3}$

b) $4\frac{3}{7} \times 5 = 20 + \frac{15}{7} = 22\frac{2}{7}$

c) $8 \times 2\frac{5}{12} = 16 + \frac{40}{12} = 19\frac{1}{3}$

d) $7 \times 3\frac{1}{5} = 21 + \frac{7}{5} = 22\frac{2}{5}$

e) $4\frac{2}{9} \times 8 = 32 + \frac{16}{9} = 33\frac{2}{9}$

f) $11 \times 4\frac{3}{10} = 44 + \frac{33}{10} = 47\frac{3}{10}$

5

$5 \times 3\frac{2}{11}$ is equal to
 $3 \times 5\frac{2}{11}$



Do you agree with Ron? No

Explain why.

$5 \times 3\frac{2}{11} = 15\frac{10}{11}$

$3 \times 5\frac{2}{11} = 15\frac{6}{11}$

6 Eva drinks $3\frac{1}{3}$ litres of water a day.

How many litres of water does she drink in a week?

$23\frac{1}{3}$ l

7 Here is a recipe for a birthday cake.



Butter $1\frac{3}{8}$ kg
Sugar $1\frac{5}{16}$ kg
Self-raising flour $2\frac{1}{4}$ kg
6 eggs

a) How much flour is needed for 3 birthday cakes?

$6\frac{3}{8}$ kg

b) Dora makes 4 birthday cakes.

How much more butter does she use than sugar?

$\frac{1}{4}$ kg

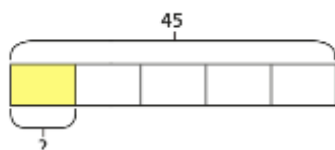


Fractions of an amount

1 Annie and Mo are finding fractions of amounts.

a) Annie is trying to find $\frac{1}{5}$ of 45

She draws this bar model.

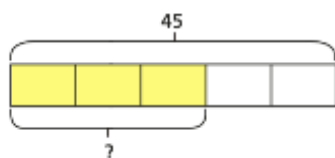


How does the bar model represent the calculation?

What is $\frac{1}{5}$ of 45?



b) Mo is trying to find $\frac{3}{5}$ of 45



How does the bar model represent the calculation?

What is $\frac{3}{5}$ of 45?



c) What is the same and what is different about Mo and Annie's questions?



2 Complete the calculations.

a) $\frac{1}{3}$ of 27 = b) $\frac{1}{3}$ of 72 = c) $\frac{1}{3}$ of 90 =

$\frac{2}{3}$ of 27 = $\frac{1}{6}$ of 72 = $\frac{2}{6}$ of 90 =

$\frac{3}{3}$ of 27 = $\frac{1}{12}$ of 72 = $\frac{3}{9}$ of 90 =

What patterns do you notice?

3 Match the calculations to the correct amounts.

$\frac{5}{8}$ of 48

32

$\frac{2}{3}$ of 48

40

$\frac{5}{6}$ of 48

30

$\frac{3}{4}$ of 48

36



4 Write $<$, $>$ or $=$ to compare the calculations.

a) $\frac{5}{7}$ of 56 $>$ $\frac{5}{8}$ of 56

c) $\frac{2}{3}$ of 63 $>$ $\frac{5}{8}$ of 64

b) $\frac{4}{7}$ of 56 $<$ $\frac{5}{8}$ of 56

d) $\frac{7}{10}$ of 350 $<$ $\frac{5}{7}$ of 350

5 165 children and adults go on a school trip.
Two thirds of the people are children.

a) How many adults are on the school trip?

55

b) $\frac{3}{5}$ of the children are boys.

How many boys are on the school trip?

66

c) $\frac{7}{10}$ of the children have an apple for lunch.

How many children do **not** have an apple for lunch?

33

6 Tick the odd one out.

$\frac{3}{4}$ of 80

$\frac{3}{8}$ of 160





$\frac{2}{3}$ of 90

$\frac{3}{4}$ of 100

Explain your choice.

Various answers

7 320 people were asked about their favourite flavour of ice cream.
Here is a pictogram showing the results.

vanilla	
strawberry	
chocolate	
mint choc chip	

a) How many people chose mint choc chip?

112

b) How many more people chose vanilla than chocolate?

32

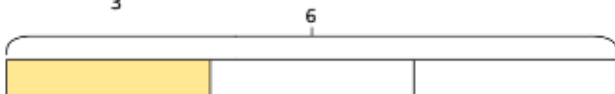
Fractions as operators

- 1 a) Work out $\frac{1}{3} \times 6$



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

- b) Work out $\frac{1}{3}$ of 6



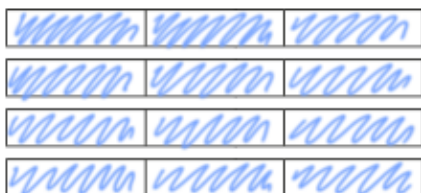
$$\frac{1}{3} \text{ of } 6 = 6 \div 3 = 2$$

- c) What is the same about these calculations?

- d) Work out $\frac{2}{3}$ of 6

$$\frac{2}{3} \text{ of } 6 = 6 \div 3 \times 2 = 4$$

- e) Work out $\frac{2}{3} \times 6$



$$\frac{2}{3} \times 6 = \frac{12}{3} = 4$$



- 2 Complete the calculations.

a) $\frac{1}{3} \times 12 = 4$

$\frac{1}{3}$ of 12 = 4

b) $12 \times \frac{1}{4} = 3$

$\frac{1}{4}$ of 12 = 3

c) $12 \times \frac{2}{3} = 8$

$\frac{2}{3}$ of 12 = 8

d) $\frac{3}{4} \times 12 = 9$

$\frac{3}{4}$ of 12 = 9

What do you notice?

- 3 Tick the calculation in each pair that is easier to work out.

a) $\frac{1}{5} \times 7$ ✓

$\frac{1}{5}$ of 7

b) $\frac{1}{5} \times 10$

$\frac{1}{5}$ of 10 ✓

c) $\frac{3}{5} \times 10$

$\frac{3}{5}$ of 10 ✓

d) $\frac{3}{10} \times 5$ ✓

$\frac{3}{10}$ of 5

Compare answers with a partner.



4 Complete the calculations.

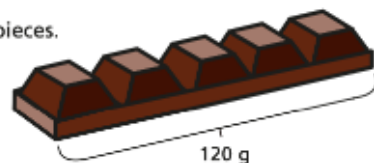
a) $\frac{5}{6} \times 12 = \frac{5}{6}$ of 12 = 10

b) $\frac{3}{4} \times 24 = \frac{3}{4}$ of 24 = 18

c) $\frac{2}{7} \times 28 = \frac{2}{7}$ of 28 = 8

d) $\frac{4}{5} \times 45 = \frac{4}{5}$ of 45 = 36

5 A bar of chocolate has 5 equal pieces.
The whole bar weighs 120g.



How much do three pieces weigh?

a) Write two calculations that will give the answer to the problem.

$\frac{3}{5} \times 120$ $\frac{3}{5} \times 120$

b) Work out the answer.

Three pieces of chocolate weigh 72g

6 Teddy and Annie are working out $\frac{3}{7} \times 42$

a)

I will multiply 42 by $\frac{3}{7}$



Teddy

Use Teddy's method to work out the calculation.

$42 \times \frac{3}{7} = \frac{126}{7} = 18$

18

b)



Annie

I will find $\frac{3}{7}$ of 42

Use Annie's method to work out the calculation.

18

c) Whose method do you prefer? _____

Explain why.

Various answers

d) When is it easier to find fractions of amounts rather than multiply fractions?

Give some examples for each method.

