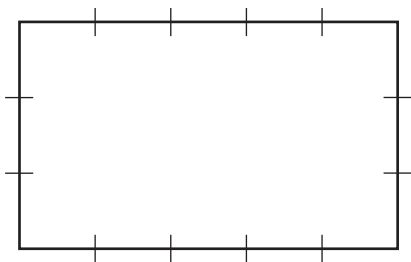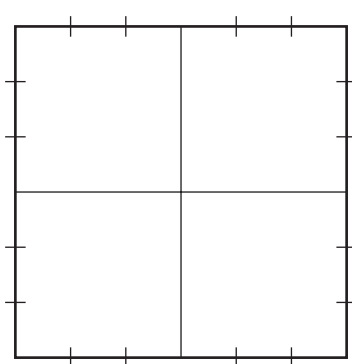# Skills practice A

1

Copy this diagram. Shade in $\frac{1}{3}$ of $\frac{4}{5}$ of the rectangle.

2

Copy this square. Shade in $\frac{2}{3}$ of $\frac{1}{4}$ of the square.

3 Find

   a $\frac{1}{2}$ of 6 km   **b** $\frac{2}{3}$ of £60   **c** $\frac{1}{4}$ of 12 kg

   d $\frac{3}{5}$ of 20 litres   **e** $\frac{3}{4}$ of €640   **f** $\frac{3}{10}$ of kilobytes

4 Work out these.

   a $\frac{1}{2} \times \frac{1}{4}$ **b** $\frac{2}{3} \times \frac{1}{5}$ **c** $\frac{3}{8} \times \frac{2}{5}$ **d** $\frac{4}{9} \times \frac{7}{10}$

5 Work out these.

   a $\frac{1}{2} \times \frac{1}{5}$ **b** $\frac{1}{3} \times \frac{1}{7}$ **c** $\frac{1}{6} \times \frac{1}{4}$

   d $\frac{1}{3} \times \frac{2}{5}$ **e** $\frac{1}{4} \times \frac{3}{5}$ **f** $\frac{3}{7} \times \frac{5}{8}$

6 Cancel these fractions as far as you can before multiplying.

   a $\frac{2}{5} \times \frac{1}{4}$ **b** $\frac{3}{8} \times \frac{4}{9}$ **c** $\frac{3}{10} \times \frac{5}{12}$

   d $\frac{7}{9} \times \frac{3}{14}$ **e** $\frac{5}{18} \times \frac{6}{25}$ **f** $\frac{8}{27} \times \frac{9}{32}$

7 Cancel these fractions as far as you can before multiplying.

a $\dfrac{5}{8} \times \dfrac{2}{3}$ 　　　　　　**b** $\dfrac{3}{16} \times \dfrac{4}{5}$ 　　　　　　**c** $\dfrac{7}{9} \times \dfrac{6}{14}$

d $\dfrac{11}{12} \times \dfrac{2}{9}$ 　　　　　　**e** $\dfrac{5}{14} \times \dfrac{7}{8}$ 　　　　　　**f** $\dfrac{2}{30} \times \dfrac{13}{14}$

8 Work out these.

a $\dfrac{2}{15} \times \dfrac{5}{12} \times \dfrac{8}{9}$ 　　　　**b** $\dfrac{3}{8} \times \dfrac{5}{9} \times \dfrac{16}{25}$ 　　　　**c** $\dfrac{7}{8} \times \dfrac{12}{21} \times \dfrac{16}{20}$

d $\dfrac{15}{33} \times \dfrac{14}{25} \times \dfrac{11}{21}$ 　　　**e** $\dfrac{12}{45} \times \dfrac{15}{81} \times \dfrac{27}{30}$ 　　　**f** $\dfrac{54}{33} \times \dfrac{49}{56} \times \dfrac{11}{63}$

DYNAMIC
LEARNING

Skills practice B

1 Work out these.

a $\frac{1}{4}$ of $\frac{1}{5}$ of a tin of 120 sweets.

b $\frac{2}{3}$ of $\frac{2}{5}$ of a lottery win of £3 million.

c $\frac{2}{3}$ of $\frac{2}{7}$ of 28 tonnes of sand.

d $\frac{5}{6}$ of $\frac{5}{8}$ of a 96 hectare field of wheat.

2 Delroy has a market garden. It is 12 acres.

He grows potatoes on $\frac{2}{3}$ of it.

He grows peas on $\frac{3}{4}$ of the rest and asparagus on the remaining area.

a Draw a diagram showing this information.

b What is $\frac{3}{4} \times \frac{1}{3}$ of 12?

c What area does Delroy use for asparagus?

3 Hamish is a fisherman. One day he lands 600 kg of fish. $\frac{2}{3}$ of this is flat fish. $\frac{3}{4}$ of the rest is codling. The remainder is a variety of other species.

a Draw a diagram showing this information.

b What is $\frac{3}{4} \times \frac{1}{3}$ of 600? What does this represent in this case?

c What weight of Hamish's fish were neither flatfish nor codling?

4 Wai Peng is reading a book 400 pages long. On Monday he reads $\frac{1}{2}$ of it.

On Wednesday he reads $\frac{1}{2}$ of what remains. On Thursday he reads $\frac{1}{2}$ of what remains.

a How many pages has he still to read on Friday?

b What fraction is this of the pages in the book?

c What is $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$?

5 John gave Peter $\frac{2}{5}$ of his CDs.

Peter gave a quarter of these CDs to his sister, Nina.

What fraction did each person get?

6 Paul ordered a lorry load of sand.

Nadir took $\frac{3}{4}$ of it.

Paul used $\frac{1}{3}$ of what was left to build his patio.

The rest was used to build a wall.

What fraction of the lorry load was used to build the wall?

7 Wine growers harvested a field of grapes.

$\frac{1}{8}$ of the crop was ruined by the rain.

They sell $\frac{3}{5}$ of the rest to a large wine producer.

What fraction of the crop was sold?

Reasoning

8 A wholesaler sold 5000 bottles of vinegar to a distributor.

The distributor sold $\frac{3}{4}$ of the bottles to Mr Patel.

Mr Patel sold $\frac{3}{5}$ of these bottles within the first week.

How many bottles did Mr Patel have left?

Reasoning

9 A car has two-thirds of a tank of petrol.
A quarter of this amount of petrol is used on a journey.
What fraction was used on the journey?

DYNAMIC
LEARNING

Skills practice B

1 Write these as mixed numbers.

  a 80 minutes in hours

  b 2325 grams in kilograms

  c 24 days in weeks

  d 420 centimetres in metres

  e 500 seconds in minutes

2 Work out these.
Give your answers as mixed numbers.

  a $1\frac{3}{4} + 3\frac{1}{2} - \frac{1}{4}$

  b $5\frac{1}{3} - 1\frac{1}{5} + \frac{13}{15}$

  c $2\frac{1}{4} \times 3\frac{2}{5} \times \frac{2}{17}$

  d $3\frac{5}{6} + 4\frac{7}{8} - 1\frac{2}{3}$

  e $4\frac{4}{5} - 1\frac{8}{9} - 1\frac{1}{9}$

  f $2\frac{3}{5} \times 2\frac{2}{3} \times 1\frac{2}{13}$

  g $1\frac{3}{4} + 2\frac{1}{5} \times 3\frac{2}{3}$

  h $8\frac{1}{2} - 4\frac{1}{3} \times 1\frac{7}{8}$

  i $2\frac{1}{4} \times 1\frac{1}{5} + 2\frac{3}{10}$

  j $3\frac{2}{3} + 1\frac{4}{5} + 2\frac{1}{2}$

  k $2\frac{5}{8} + 3\frac{6}{7} - 4\frac{1}{2}$

  l $2\frac{2}{3} \times 1\frac{3}{4} \times 2\frac{1}{2}$

3 Give your answers to these questions as mixed numbers.

  a A glass contains 200 ml. How many glasses amount to 750 ml?

  b Jennie earns £9 per hour. How many hours would she need to work to make £100?

  c Abdul takes 4 minutes to read one page. How many pages does he read in 15 minutes?

  d A bag of sugar weighs 250 grams. How many bags are needed to get 1300 grams?

4 The map shows the distances in miles along a footpath.
Find the total length of the path.

5 Yaya is a long distance runner. She runs a steady $7\frac{1}{2}$ miles each hour. How far does she travel in

  a $2\frac{1}{2}$ hours

  b 3 hours 20 minutes?

6 Jenny is trying to limit her screen time to 3 hours a day.

One day she uses her screen time like this.

a How much screen time has she spent?

b How much screen time does she have left?

Computer games	$\frac{1}{2}$ hr
Watching videos on the internet	$\frac{3}{4}$ hr
TV	$\frac{1}{2}$ hr
Social media	$\frac{5}{6}$ hr

7 To get to school, John walks $\frac{3}{4}$ km to the bus stop.

He catches the bus to the station, a distance of $5\frac{1}{2}$ km.

His train journey is $23\frac{2}{3}$ km.

Finally he walks $\frac{1}{5}$ km to school.

What is the total length of John's journey to school?

8 A cross country race circuit is 2500 metres.

a On Monday Ailsa runs 7000 metres.

How many circuits is this? (Give your answer as a mixed number.)

b On Tuesday Ailsa runs 9000 metres. How many circuits is this?

c Add your answers to parts **a** and **b**.

d How many metres does Ailsa run on Monday and Tuesday together? Convert your answer to a number of circuits.

9 Erica is preparing a party for 30 people.

She estimates the amount of food each person will eat.

How much of each type of food should Erica buy?

Pizza	$\frac{1}{4}$
Garlic bread	$\frac{1}{3}$ loaf
Lettuce	$\frac{1}{6}$
Tomato	$\frac{3}{4}$
Salad cream	$\frac{1}{12}$ bottle
Coleslaw	$\frac{1}{8}$ tub

10 A bus arrives at a bus stop.

It is already $\frac{3}{4}$ full.

The number of people standing at the stop could fill $\frac{1}{3}$ of the bus.

What fraction of a bus load are left at the bus stop?

11 A sponsored walk for charity is 15 miles long.

Checkpoint A is $6\frac{2}{3}$ miles from the start.

Checkpoint B is $4\frac{1}{4}$ miles from the finish.

a How far is checkpoint B from the start?

b What is the distance between checkpoints?