St Andrew's Academy
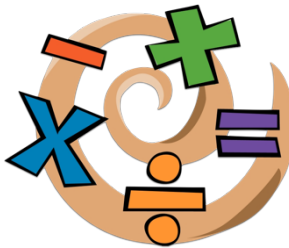
Mathematics Department
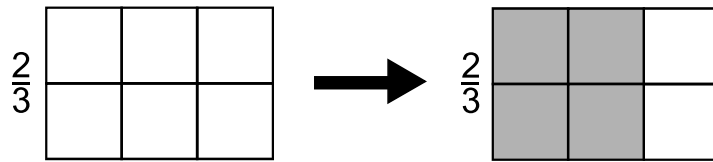
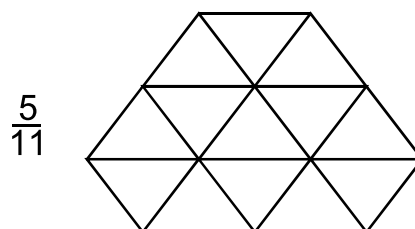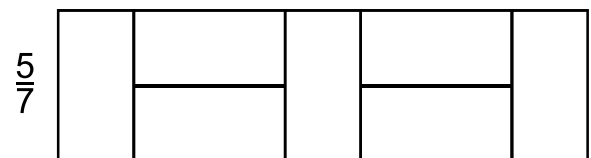# *S1 BLOCK 1*
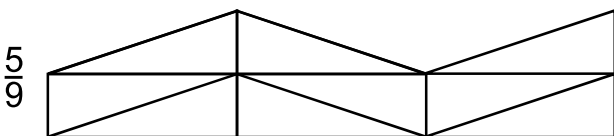
FRACTIONS

1										

½					½					

¼		¼		¼		¼				

$^1/_6$	$^1/_6$	$^1/_6$	$^1/_6$	$^1/_6$	$^1/_6$

$^1/_8$	$^1/_8$	$^1/_8$	$^1/_8$	$^1/_8$	$^1/_8$	$^1/_8$	$^1/_8$

$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$	$^1/_{10}$

Shading Fractions

Shade in the fraction of the shape shown.

Fractions of Shapes
Video 143 on www.corbettmaths.com

Workout

5
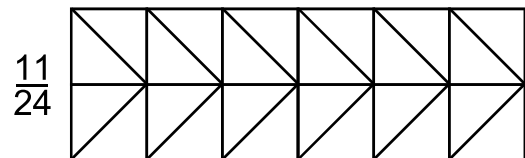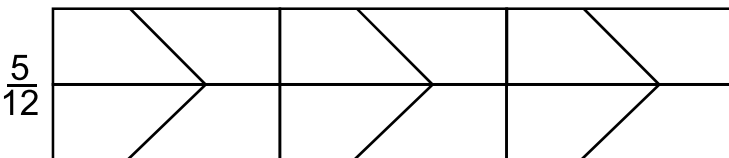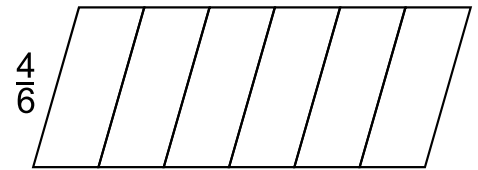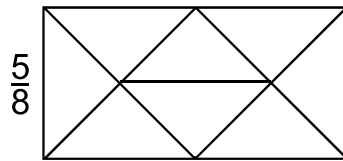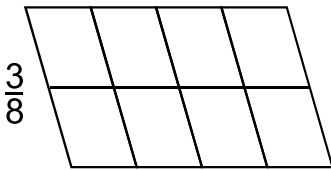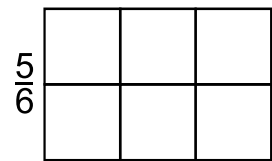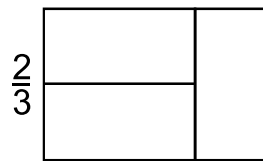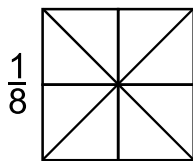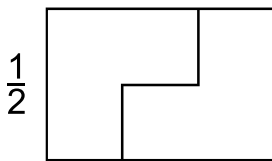
Question 1:   Shade in each shape by the fraction given.

(a)
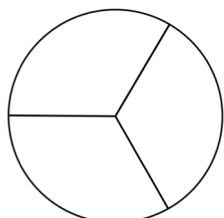
Shade in $\dfrac{1}{3}$

(b)
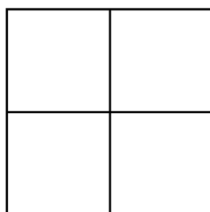
Shade in $\dfrac{1}{4}$

(c)
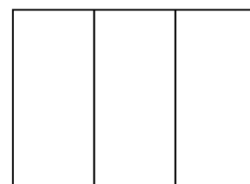
Shade in $\dfrac{2}{3}$

(d)
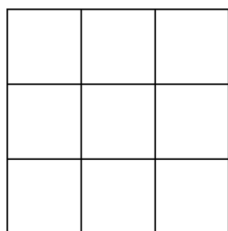
Shade in $\dfrac{5}{9}$

(e)
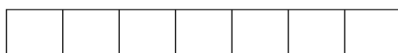
Shade in $\dfrac{2}{7}$

(f)
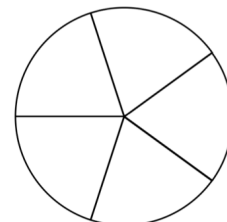
Shade in $\dfrac{4}{5}$

Question 2:   Shade in each shape by the fraction given.

(a)
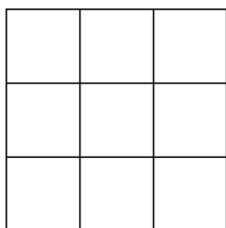
Shade in $\dfrac{2}{3}$

(b)
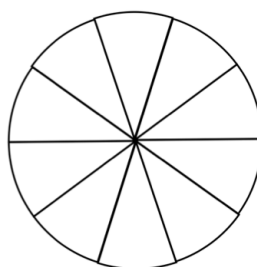
Shade in $\dfrac{1}{5}$

(c)
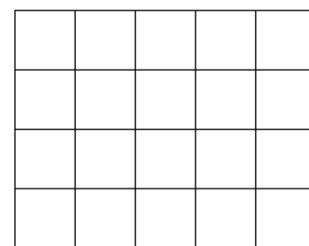
Shade in $\dfrac{3}{4}$

(d)
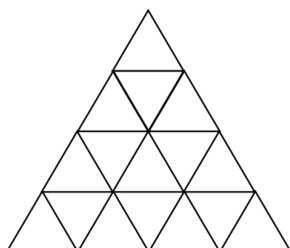
Shade in $\dfrac{1}{4}$

(e)
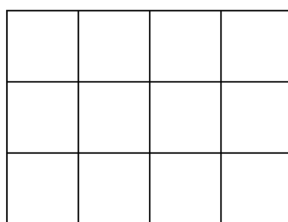
Shade in $\dfrac{2}{3}$

(f)
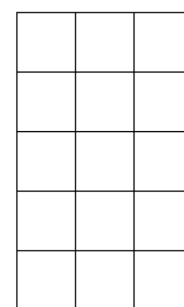
Shade in $\dfrac{3}{5}$

5

Fractions of Shapes
Video 143 on www.corbettmaths.com

Question 3: Write down the fraction of each shape that is shaded.

(a)
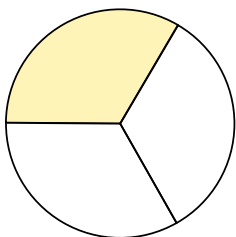
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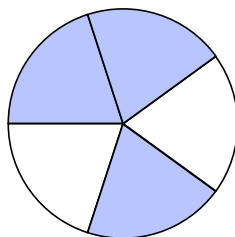
(c)
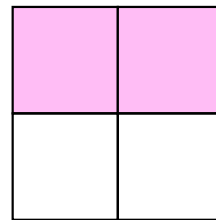
(d)
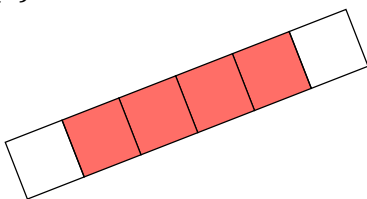
(e)
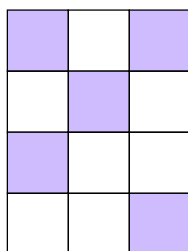
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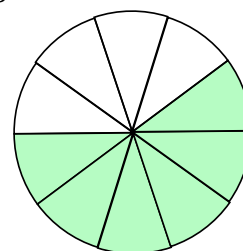
(g)
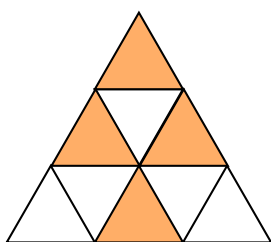
(h)
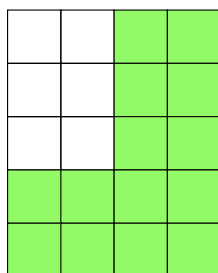
(i)
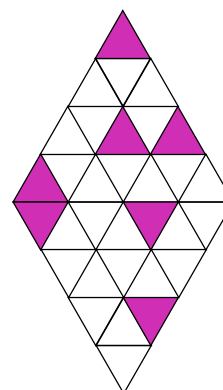
Apply

Question 1: Which shape is the odd one out?
Explain your answer.
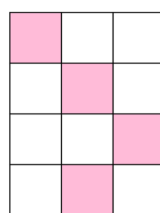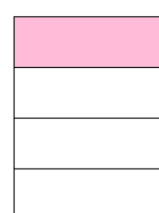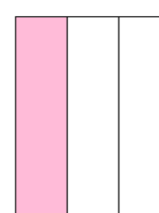
Shape A   Shape B   Shape C

Question 2: Jamie is trying to shade $\frac{1}{3}$ of the grid.

Each square he decides to shade, he must shade in fully.

Can he successfully shade in $\frac{1}{3}$ of the grid?

Explain your answer.
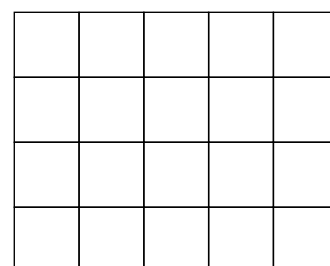
Fractions 3

This shape   is divided into $\frac{1}{4}$'s $\frac{3}{4}$ are shaded.

Shade in the given fraction of the following shapes.

$\frac{1}{6}$

$\frac{1}{4}$

$\frac{5}{6}$

$\frac{3}{4}$

$\frac{2}{5}$

$\frac{3}{7}$

$\frac{1}{3}$

$\frac{9}{16}$

$\frac{7}{12}$

$\frac{4}{6}$

$\frac{11}{14}$

$\frac{7}{9}$

3
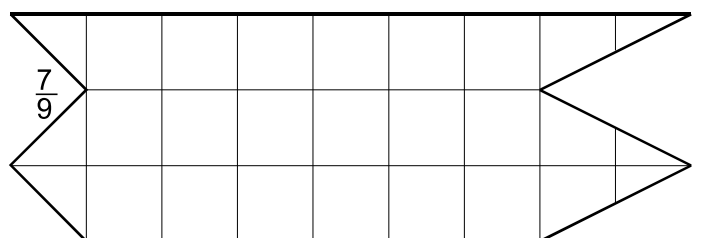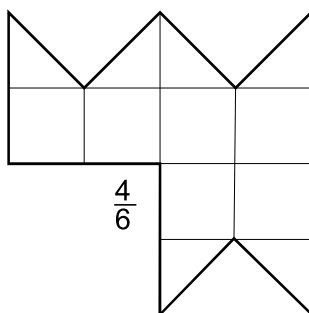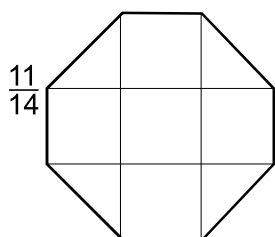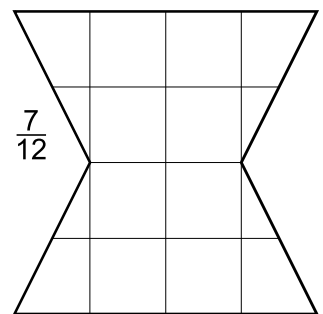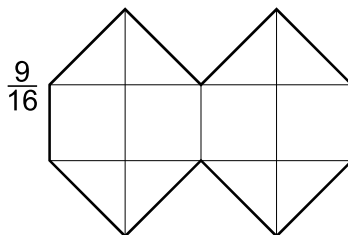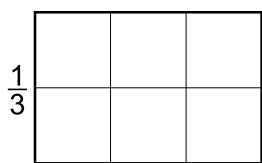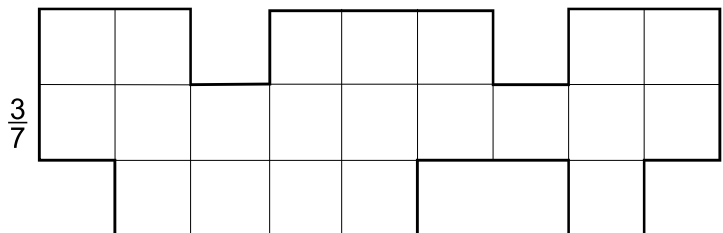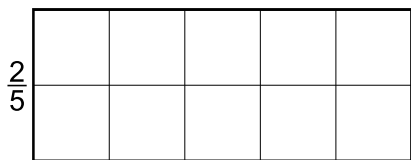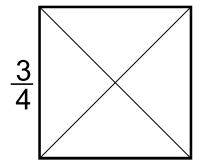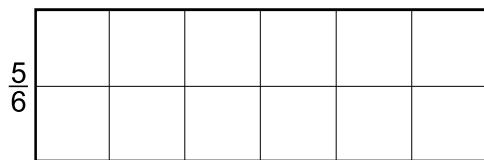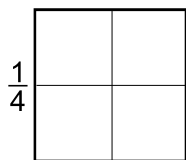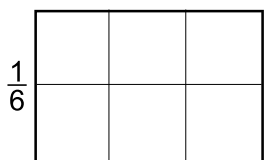
Fractions 4

Example

Complete the table using the diagrams below.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.
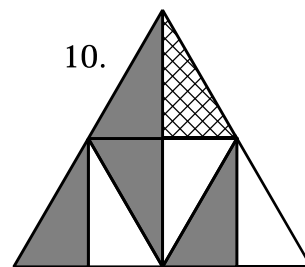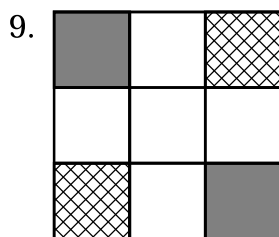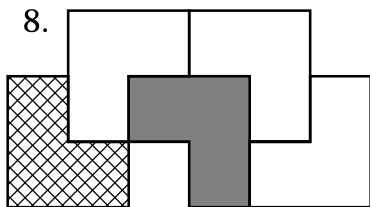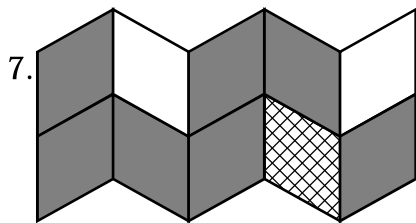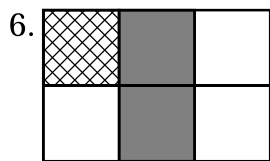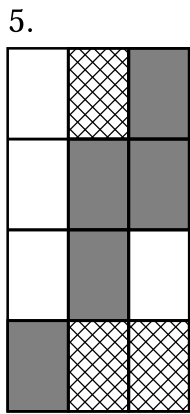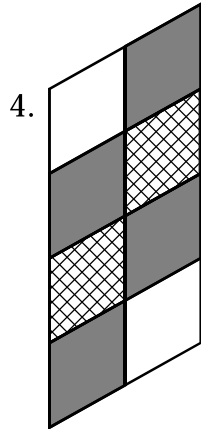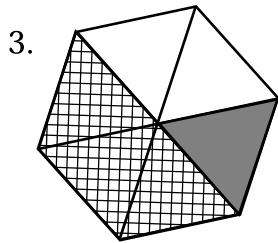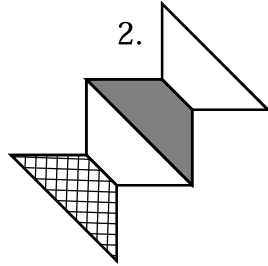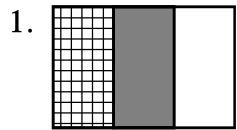
	Number of equal parts	Fraction shaded with lines	Fraction shaded grey	Fraction shaded altogether	Fraction unshaded
Example	10	$\frac{3}{10}$	$\frac{5}{10}$	$\frac{8}{10}$	$\frac{2}{10}$
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Fractions on Number Lines

1. Show the position of the following fractions on the number line.

   $A = \dfrac{3}{10}$ $\qquad\qquad$ $B = \dfrac{1}{10}$ $\qquad\qquad$ $C = \dfrac{2}{5}$ $\qquad\qquad$ $D = \dfrac{9}{10}$

   0 $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ 1
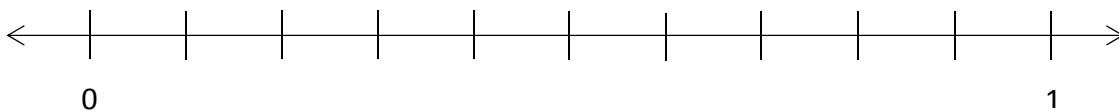
2. Show the position of the following fractions on the number line.

   $A = \dfrac{7}{9}$ $\qquad\qquad$ $B = \dfrac{4}{9}$ $\qquad\qquad$ $C = \dfrac{2}{9}$ $\qquad\qquad$ $D = \dfrac{1}{9}$

   0 $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ 1
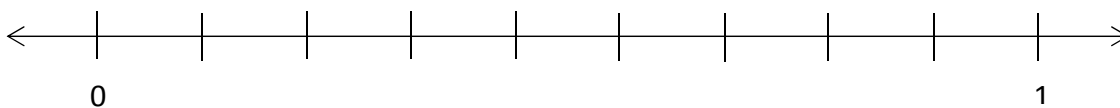
3. Show the position of the following fractions on the number line.

   $A = \dfrac{1}{12}$ $\qquad\qquad$ $B = \dfrac{5}{12}$ $\qquad\qquad$ $C = \dfrac{2}{3}$ $\qquad\qquad$ $D = \dfrac{5}{6}$

   0 $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ 1
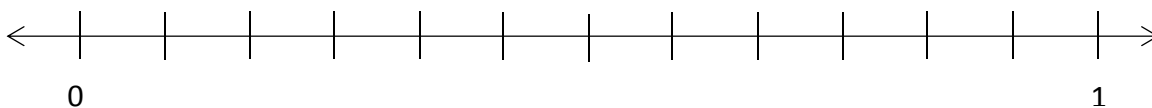
4. Show the position of the following fractions on the number line.

   $A = \dfrac{1}{5}$ $\qquad\qquad$ $B = \dfrac{3}{5}$ $\qquad\qquad$ $C = \dfrac{3}{10}$ $\qquad\qquad$ $D = \dfrac{2}{5}$

   0 $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ 1

7
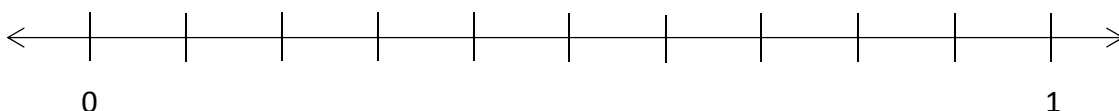
5. Show the position of the following fractions on the number line.

$A = \frac{5}{9}$ $B = \frac{8}{9}$ $C = \frac{1}{9}$ $D = \frac{4}{9}$

```
←——+———+———+———+———+———+———+———+———+———+——→
   0                                       1
```
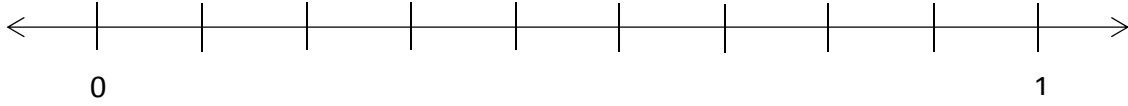
6. Show the position of the following fractions on the number line.

$A = \frac{2}{7}$ $B = \frac{4}{7}$ $C = \frac{1}{7}$ $D = \frac{3}{7}$

```
←——+———+———+———+———+———+———+———+——→
   0                                 1
```

7. Show the position of the following fractions on the number line.

$A = \frac{4}{5}$ $B = \frac{3}{5}$ $C = \frac{1}{5}$ $D = \frac{2}{5}$

```
←——+—————+—————+—————+—————+—————+——→
   0                                 1
```
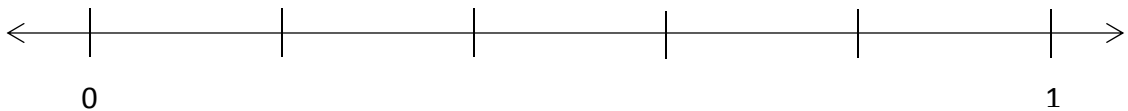
8. Show the position of the following fractions on the number line.

$A = \frac{5}{6}$ $B = \frac{1}{3}$ $C = \frac{1}{6}$ $D = \frac{2}{3}$

```
←——+—————+—————+—————+—————+—————+—————+——→
   0                                         1
```
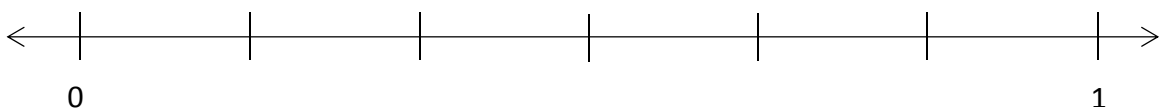
9. Show the position of the following fractions on the number line.

$A = \dfrac{1}{10}$ $B = \dfrac{7}{10}$ $C = \dfrac{3}{10}$ $D = \dfrac{9}{10}$

0   1
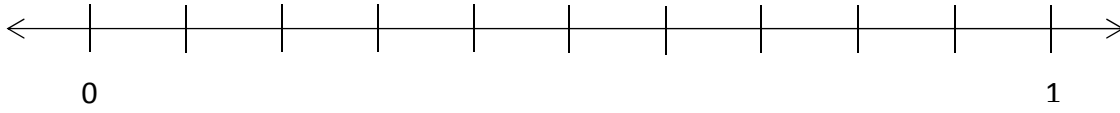
10. Show the position of the following fractions on the number line.

$A = \dfrac{7}{8}$ $B = \dfrac{1}{8}$ $C = \dfrac{5}{8}$ $D = \dfrac{3}{8}$

0   1
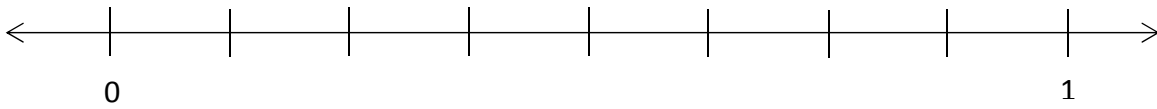
11. Show the position of the following fractions on the number line.

$A = \dfrac{2}{5}$ $B = \dfrac{3}{10}$ $C = \dfrac{3}{5}$ $D = \dfrac{1}{2}$

0   1
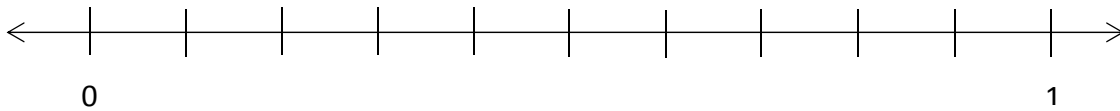
12. Show the position of the following fractions on the number line.

$A = \dfrac{1}{4}$ $B = \dfrac{5}{6}$ $C = \dfrac{2}{3}$ $D = \dfrac{1}{3}$

0   1
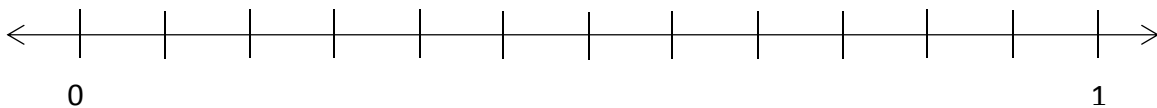
Workout

Question 1: Arrange the following sets of fractions in order, from smallest to largest

(a) $\dfrac{6}{7}$, $\dfrac{1}{7}$, $\dfrac{2}{7}$, $\dfrac{5}{7}$

(b) $\dfrac{3}{10}$, $\dfrac{9}{10}$, $\dfrac{1}{10}$, $\dfrac{7}{10}$

(c) $\dfrac{2}{9}$, $\dfrac{8}{9}$, $\dfrac{5}{9}$, $\dfrac{1}{9}$

Question 2: Arrange the following sets of fractions in order, from smallest to largest

(a) $\dfrac{1}{5}$, $\dfrac{3}{10}$, $\dfrac{2}{5}$, $\dfrac{1}{10}$

(b) $\dfrac{1}{8}$, $\dfrac{1}{4}$, $\dfrac{5}{8}$, $\dfrac{3}{4}$

(c) $\dfrac{5}{9}$, $\dfrac{2}{3}$, $\dfrac{7}{9}$, $\dfrac{1}{3}$

(d) $\dfrac{3}{5}$, $\dfrac{13}{20}$, $\dfrac{2}{5}$, $\dfrac{9}{20}$

(e) $\dfrac{5}{6}$, $\dfrac{7}{12}$, $\dfrac{5}{12}$, $\dfrac{11}{12}$

(f) $\dfrac{7}{20}$, $\dfrac{23}{60}$, $\dfrac{9}{20}$, $\dfrac{29}{60}$

Question 3: Arrange the following sets of fractions in order, from smallest to largest

(a) $\dfrac{2}{3}$, $\dfrac{11}{15}$, $\dfrac{7}{15}$, $\dfrac{3}{5}$

(b) $\dfrac{13}{20}$, $\dfrac{3}{4}$, $\dfrac{7}{10}$, $\dfrac{11}{20}$

(c) $\dfrac{1}{2}$, $\dfrac{2}{3}$, $\dfrac{7}{12}$, $\dfrac{5}{6}$

(d) $\dfrac{13}{16}$, $\dfrac{3}{4}$, $\dfrac{5}{8}$, $\dfrac{11}{16}$

(e) $\dfrac{3}{50}$, $\dfrac{7}{100}$, $\dfrac{1}{10}$, $\dfrac{9}{200}$

(f) $\dfrac{13}{20}$, $\dfrac{4}{5}$, $\dfrac{7}{10}$, $\dfrac{23}{40}$

Question 4: Arrange the following sets of fractions in order, from smallest to largest

(a) $\dfrac{3}{4}$, $\dfrac{2}{3}$, $\dfrac{5}{6}$, $\dfrac{1}{3}$

(b) $\dfrac{1}{4}$, $\dfrac{3}{8}$, $\dfrac{1}{6}$, $\dfrac{5}{12}$

(c) $\dfrac{9}{20}$, $\dfrac{5}{12}$, $\dfrac{3}{10}$, $\dfrac{17}{30}$

(d) $\dfrac{3}{25}$, $\dfrac{1}{10}$, $\dfrac{1}{8}$, $\dfrac{7}{50}$

(e) $\dfrac{27}{40}$, $\dfrac{3}{5}$, $\dfrac{5}{8}$, $\dfrac{6}{15}$

(f) $\dfrac{7}{20}$, $\dfrac{1}{3}$, $\dfrac{3}{8}$, $\dfrac{2}{5}$

Apply

Question 1: Write down a fraction between $\dfrac{2}{3}$ and $\dfrac{4}{5}$

Question 2: Write down a fraction between $\dfrac{5}{8}$ and $\dfrac{2}{3}$

Fraction of an Amount
Video 137 on www.corbettmaths.com

Workout

Question 1:   Work out each of the following

(a) $\frac{1}{2}$ of 10

(b) $\frac{1}{3}$ of 18

(c) $\frac{1}{5}$ of 20

(d) $\frac{1}{4}$ of 24

(e) $\frac{1}{9}$ of 27

(f) $\frac{1}{10}$ of 160

(g) $\frac{1}{8}$ of 80

(h) $\frac{1}{7}$ of 49

(i) $\frac{1}{2}$ of 9

(j) $\frac{1}{5}$ of 65

(k) $\frac{1}{12}$ of 72

(l) $\frac{1}{11}$ of 132

Question 2:   Work out each of the following

(a) $\frac{2}{3}$ of 15

(b) $\frac{7}{10}$ of 20

(c) $\frac{2}{5}$ of 30

(d) $\frac{3}{4}$ of 32

(e) $\frac{3}{5}$ of 45

(f) $\frac{2}{7}$ of 28

(g) $\frac{3}{8}$ of 88

(h) $\frac{3}{10}$ of 120

(i) $\frac{5}{9}$ of 63

(j) $\frac{13}{20}$ of 60

(k) $\frac{2}{7}$ of 91

(l) $\frac{4}{15}$ of 120

Question 3:   Work out each of the following.
                Include suitable units.

(a) $\frac{1}{3}$ of £21

(b) $\frac{3}{4}$ of 100kg

(c) $\frac{2}{3}$ of 27cm

(d) $\frac{7}{8}$ of 32 seconds

(e) $\frac{2}{5}$ of 90 miles

(f) $\frac{5}{6}$ of £150

(g) $\frac{5}{12}$ of 240ml

(h) $\frac{9}{10}$ of 310 students

(i) $\frac{1}{8}$ of a day

(j) $\frac{4}{5}$ of 1km

(k) $\frac{3}{7}$ of 2 weeks

(l) $\frac{1}{500}$ of 1m

Question 4:   Work out each of the following.

(a) $\frac{3}{10}$ of 32 miles

(b) $\frac{2}{5}$ of 9kg

(c) $\frac{1}{3}$ of 8 litres

(d) $\frac{3}{5}$ of £7

(e) $\frac{1}{8}$ of 50cm

(f) $\frac{1}{5}$ of 4931km

(g) $\frac{3}{4}$ of £57

(h) $\frac{2}{9}$ of 211km

Question 5: Work out the largest of each of the following pairs.

(a) $\frac{1}{3}$ of 21 *or* $\frac{1}{2}$ of 12   (b) $\frac{1}{6}$ of 30 *or* $\frac{2}{3}$ of 9   (c) $\frac{2}{5}$ of 65 *or* $\frac{3}{4}$ of 32

(d) $\frac{1}{5}$ of 2m *or* $\frac{3}{4}$ of 60cm (e) $\frac{3}{8}$ of a day *or* $\frac{1}{10}$ of 85 hours

(f) $\frac{7}{15}$ of 480 *or* $\frac{2}{3}$ of 453   (f) $\frac{3}{10}$ of 395 *or* $\frac{2}{7}$ of 420

Apply

Question 1: James has 20 sweets.

$\frac{3}{4}$ of the sweets are red.

How many sweets are red?

Question 2: In a class, there are 24 students.

$\frac{1}{8}$ of the students wear glasses.

How many students wear glasses?

Question 3: There are 40 apples in a crate.

$\frac{3}{5}$ of the apples are bad.

How many good apples are there?
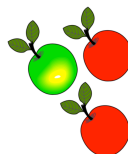
Question 4: On Wednesday, James slept for $\frac{3}{8}$ of the day

(a) How many hours did James spend sleeping?

(b) For how many hours was James awake?

(c) What fraction of the day was James awake?

Workout

Question 1:

(a) Increase 40 by $\frac{1}{2}$

(b) Increase 18 by $\frac{1}{3}$

(c) Decrease 20 by $\frac{1}{4}$

(d) Increase 30 by $\frac{1}{5}$

(e) Decrease 24 by $\frac{1}{8}$

(f) Decrease 70 by $\frac{1}{10}$

(g) Increase 120 by $\frac{1}{3}$

(h) Decrease 80 by $\frac{1}{5}$

(i) Increase 72 by $\frac{1}{9}$

Question 2:

(a) Increase 12 by $\frac{2}{3}$

(b) Decrease 40 by $\frac{3}{10}$

(c) Increase 30 by $\frac{2}{5}$

(d) Decrease 16 by $\frac{3}{4}$

(e) Increase 90 by $\frac{7}{10}$

(f) Decrease 14 by $\frac{3}{7}$

(g) Increase 48 by $\frac{5}{8}$

(h) Decrease 54 by $\frac{2}{9}$

(i) Increase 84 by $\frac{3}{4}$

(j) Increase 275 by $\frac{2}{5}$

(k) Decrease 240 by $\frac{3}{8}$

(l) Increase 324 by $\frac{7}{9}$

Question 3:

(a) Increase 60cm by $\frac{3}{10}$

(b) Decrease 120kg by $\frac{1}{4}$

(c) Increase 400ml by $\frac{2}{5}$

(d) Increase 14g by $\frac{1}{5}$

(e) Decrease 50 litres by $\frac{1}{8}$

(f) Increase 130ml by $\frac{3}{4}$

(g) Increase £76 by $\frac{2}{5}$

(h) Increase 92cm by $\frac{3}{20}$

(i) Increase 1.4kg by $\frac{7}{8}$

Apply

Question 1:   Annie is paid £300 per week.
              She is going to get a pay rise and her pay will increase by a $\frac{1}{5}$

              What will her weekly pay be after the pay rise?

Question 2: Last season, the number of points a rugby team scored was 420.

This season, the number of points they scored increased by $\frac{2}{3}$

How many points did the team score this season?

Question 3: A jam jar usually contains 420g of jam.

A special edition jar contains $\frac{3}{10}$ more jam.

How much extra jam is in the special edition jar?

Question 4: Find the missing values

(a)   60 reduced by a $\frac{1}{3}$ is the same as 50 reduced by a $\boxed{?}$

(b)   72 increased by a $\frac{3}{4}$ is the same as $\boxed{?}$ reduced by a $\frac{1}{10}$

Question 5: In 1990, the number of birds that live on an island was 1,200.

By 2010, the number of birds that live on the island increased by $\frac{9}{4}$

How many birds live on the island in 2010?

Question 6: Tia is training for a marathon using a special training programme.

Each month she runs $\frac{2}{5}$ more miles than she did in the previous month.

In January, Tia ran 15 miles.

(a) How many miles did Tia run in February?

(b) How many miles did Tia run in March?

David says that Tia will not follow the special training programme forever.

(c) Explain why David is right.

Workout

Question 1: Find the original number for each question below.

(a) $\frac{1}{2}$ of a number is 7, what is the number?   (b) $\frac{1}{3}$ of a number is 4, what is the number?

(c) $\frac{1}{4}$ of a number is 8, what is the number?   (d) $\frac{1}{5}$ of a number is 9, what is the number?

(e) $\frac{1}{2}$ of a number is 12.5, what is the number?   (f) $\frac{1}{3}$ of a number is 27, what is the number?

(g) $\frac{1}{10}$ of a number is 2.6, what is the number?   (h) $\frac{1}{12}$ of a number is 8, what is the number?

Question 2: Find the original number for each question below.

(a) $\frac{2}{3}$ of a number is 12, what is the number?   (b) $\frac{2}{5}$ of a number is 10, what is the number?

(c) $\frac{2}{7}$ of a number is 6, what is the number?   (d) $\frac{3}{10}$ of a number is 60, what is the number?

(e) $\frac{4}{9}$ of a number is 12, what is the number?   (f) $\frac{2}{3}$ of a number is 3, what is the number?

(g) $\frac{3}{4}$ of a number is 27, what is the number?   (h) $\frac{5}{12}$ of a number is 35, what is the number?

Question 3: Find the original number for each question below.

(a) A number is increased by $\frac{1}{3}$ to 16. What was the number?

(b) A number is increased by $\frac{1}{5}$ to 36. What was the number?

(c) A number is decreased by $\frac{1}{4}$ to 21. What was the number?

(d) A number is decreased by $\frac{1}{10}$ to 162. What was the number?

(e) A number is increased by $\frac{2}{5}$ to 49. What was the number?

(f) A number is increased by $\frac{3}{8}$ to 22. What was the number?

(g) A number is decreased by $\frac{4}{5}$ to 12. What was the number?

(h) A number is decreased by $\frac{13}{20}$ to 1400. What was the number?

Apply

Question 1: Rebecca is $\frac{1}{6}$ of Barry's age.

Barry is $\frac{1}{3}$ of Neville's age.

If Rebecca is 4 years old, how old is Neville?

Question 2: A new snack bar contains 7.5g of sugar.

$\frac{3}{10}$ of the snack bar is sugar.

Work out the mass of the snack bar.

Question 3: In a class, $\frac{2}{7}$ of the students have blonde hair.

There are 20 students without blonde hair.

How many students are in the class?

Question 4: The height of a tree increased by $\frac{4}{15}$ during 2016.

The tree is 2.47m by the end of 2016.

Work out the height of the tree at the beginning of 2016.

Question 5: Laura invested some money.

In the first year, the amount of money increased by $\frac{1}{20}$

In the second year, the amount of money increased by $\frac{1}{5}$

In the third year, the amount of money decreased by $\frac{1}{4}$

Was the investment a success?

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Workout

Question 1:   Find the missing numbers

(a) $\dfrac{2}{3} = \dfrac{}{6}$

(b) $\dfrac{1}{5} = \dfrac{}{20}$

(c) $\dfrac{3}{4} = \dfrac{}{12}$

(d) $\dfrac{5}{7} = \dfrac{10}{}$

(e) $\dfrac{}{5} = \dfrac{15}{25}$

(f) $\dfrac{4}{} = \dfrac{12}{21}$

(g) $\dfrac{3}{10} = \dfrac{}{50}$

(h) $\dfrac{7}{8} = \dfrac{14}{}$

(i) $\dfrac{3}{4} = \dfrac{30}{}$

(j) $\dfrac{}{8} = \dfrac{55}{88}$

(k) $\dfrac{2}{9} = \dfrac{10}{}$

(l) $\dfrac{2}{3} = \dfrac{}{18}$

(m) $\dfrac{1}{20} = \dfrac{5}{}$

(n) $\dfrac{5}{6} = \dfrac{}{18}$

(o) $\dfrac{3}{8} = \dfrac{9}{}$

(p) $\dfrac{7}{12} = \dfrac{}{36}$

Question 2:   Find the missing numbers

(a) $\dfrac{6}{7} = \dfrac{42}{}$

(b) $\dfrac{9}{20} = \dfrac{63}{}$

(c) $\dfrac{5}{12} = \dfrac{35}{}$

(d) $\dfrac{7}{8} = \dfrac{}{64}$

(e) $\dfrac{4}{} = \dfrac{32}{72}$

(f) $\dfrac{3}{4} = \dfrac{}{52}$

(g) $\dfrac{7}{25} = \dfrac{140}{}$

(h) $\dfrac{}{15} = \dfrac{42}{105}$

(i) $\dfrac{11}{16} = \dfrac{88}{}$

(j) $\dfrac{2}{9} = \dfrac{}{108}$

(k) $\dfrac{13}{25} = \dfrac{}{375}$

(l) $\dfrac{9}{} = \dfrac{81}{144}$

Apply

Question 1:   Write down 3 different fractions that are equivalent to $\dfrac{1}{2}$

Question 2:   Write down 3 different fractions that are equivalent to $\dfrac{3}{5}$

Question 3:   Write down 3 different fractions that are equivalent to $\dfrac{7}{12}$

Question 4: Dave and Tom are discussing fractions.
Is either man correct?

$\frac{4}{5}$ is equivalent to $\frac{16}{20}$

$\frac{4}{5}$ is equivalent to $\frac{20}{24}$

Dave

Tom
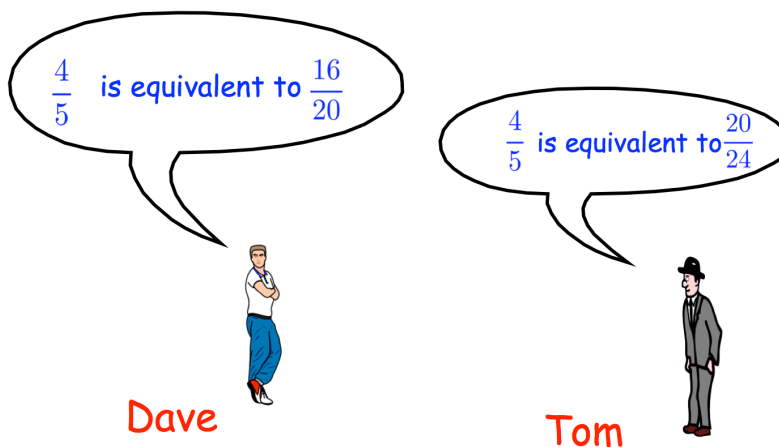
Question 5: Use the grid to explain why $\dfrac{3}{4}$ cannot be written as a fraction with a

denominator of 15.
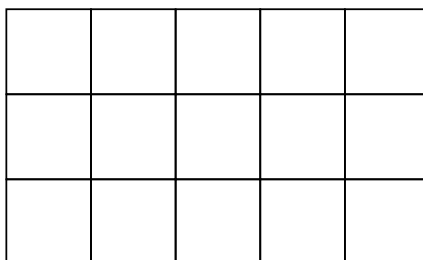
Question 6: Macey has completed her maths homework.
Can you explain what she has done wrong?

(a) $\dfrac{3}{4} = \dfrac{\boxed{4}}{16}$

(c) $\dfrac{7}{8} = \dfrac{35}{\boxed{5}}$

(b) $\dfrac{\boxed{3}}{5} = \dfrac{6}{15}$

(d) $\dfrac{2}{\boxed{8}} = \dfrac{16}{40}$

Fractions: Simplifying
Video 146 on www.corbettmaths.com

Workout

Question 1: Simplify fully

(a) $\dfrac{2}{4}$ (b) $\dfrac{6}{9}$ (c) $\dfrac{6}{8}$ (d) $\dfrac{5}{15}$ (e) $\dfrac{4}{6}$ (f) $\dfrac{9}{12}$

(g) $\dfrac{10}{15}$ (h) $\dfrac{9}{15}$ (i) $\dfrac{8}{12}$ (j) $\dfrac{10}{14}$ (k) $\dfrac{15}{35}$ (l) $\dfrac{6}{21}$

(m) $\dfrac{18}{22}$ (n) $\dfrac{16}{20}$ (o) $\dfrac{9}{24}$ (p) $\dfrac{20}{30}$ (q) $\dfrac{8}{28}$ (r) $\dfrac{300}{500}$

Question 2: Cancel down each fraction to its simplest form

(a) $\dfrac{14}{35}$ (b) $\dfrac{8}{64}$ (c) $\dfrac{18}{24}$ (d) $\dfrac{75}{100}$ (e) $\dfrac{24}{80}$ (f) $\dfrac{6}{42}$

(g) $\dfrac{36}{66}$ (h) $\dfrac{18}{45}$ (i) $\dfrac{70}{120}$ (j) $\dfrac{49}{56}$ (k) $\dfrac{22}{110}$ (l) $\dfrac{18}{72}$

(m) $\dfrac{60}{140}$ (n) $\dfrac{45}{135}$ (o) $\dfrac{40}{360}$ (p) $\dfrac{64}{100}$ (q) $\dfrac{85}{35}$ (r) $\dfrac{48}{36}$

Question 3: Simplify fully

(a) $\dfrac{145}{225}$ (b) $\dfrac{190}{570}$ (c) $\dfrac{200}{288}$ (d) $\dfrac{230}{495}$ (e) $\dfrac{54}{333}$ (f) $\dfrac{96}{123}$

Apply

Question 1:   Which fractions below are equivalent to $\dfrac{2}{3}$?

$$\dfrac{4}{6} \qquad \dfrac{6}{8} \qquad \dfrac{8}{12} \qquad \dfrac{9}{12} \qquad \dfrac{10}{15}$$

Question 2:   James says that $\dfrac{1}{3}$ of the grid is shaded

Cara says $\dfrac{4}{12}$ of the grid is shaded.

Explain how they are both correct.
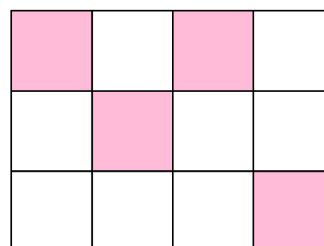
Question 3:   Given that 5 × 13 = 65 and 7 × 13 = 91 simplify fully $\dfrac{65}{91}$

Question 4:   Freddy has 40 cupcakes.
20 of the cupcakes are chocolate.
10 of the cupcakes are lemon.
8 of the cupcakes are strawberry.
The rest of the cupcakes of vanilla.

(a) What fraction of the cupcakes are chocolate?
Give the fraction in its simplest form.

(b) What fraction of the cupcakes are lemon?
Give the fraction in its simplest form.

(c) What fraction of the cupcakes are strawberry?
Give the fraction in its simplest form.

(d) What fraction of the cupcakes are vanilla?
Give the fraction in its simplest form.

Question 5:   There are 200 students in a primary school.
80 students wear glasses.
What fraction of the students wear glasses?
Give the fraction in its simplest form.

Question 6:   Sarah has £240 and she gives her mum £80.
What fraction of the money does Sarah have left?
Give the fraction in its simplest form.

Workout

Question 1:   Give each answer as a simplified fraction

(a)   Write 5 days as a fraction of 20 days

(b)   Write £6 as a fraction of £8

(c)   Write 10p as a fraction of 30p

(d)   Write 6kg as a fraction of 12kg

(e)   Write 9cm as a fraction of 15cm

(f)   Write 25 days as a fraction of 35 days

(g)   Write 8p as a fraction of 40p

(h)   Write 52p as a fraction of 90p

(i)   Write 30ml as a fraction of 110ml

(j)   Write 360kg as a fraction of 480kg

Question 2:   Give each answer as a simplified fraction

(a)   Write 2 days as a fraction of 1 week

(b)   Write 40p as a fraction of £3

(c)   Write 5 minutes as a fraction of 2 hours

(d)   Write 2 months as a fraction of 1 year

(e)   Write 500g as a fraction of 40kg

(f)   Write 750ml as a fraction of 3 litres

(g)   Write 8g as a fraction of 4kg

(h)   Write 920mm as a fraction of 12m

(i)   Write £1.85 as a fraction of

(j)   Write 50 seconds as a fraction of 1 hour

Apply

Question 1:   There are 30 students in a class.
                20 students have brown hair.
                What fraction of the class have brown hair?
                Give your answer in its simplest form.

Question 2:   A bag contains red and white sweets.
                There are 12 red sweets and 8 white sweets.
                What fraction of the sweets are white?
                Give your answer in its simplest form.

Question 3:   Over one day, Rebecca spends 6 hours sleeping.
                What fraction of the day is Rebecca awake?
                Give your answer in its simplest form.

Corbett maths

Question 4: John has 12 pieces of card, each with a letter written on it.

C O R B E T T M A T H S

(a) What fraction of the letters are the letter T?
(b) What fraction of the letters are the letter A?
(c) What fraction of the letters are vowels?
(d) What fraction of the letters are **not** the letter T?

Question 5: Jemima receives £5 pocket money.
She spends £1.75 on a magazine and 80p on a drink.

(a) What fraction of the pocket money has she spent?
(b) What fraction of the pocket money does Jemima have left?

Question 6: In a town in Cornwall, it rained for 18 days during April.
What fraction of the month did it rain?

Question 7: Barry is saving money towards a new motorbike that costs £4,000.
Each month, he saves £5 more than the previous month.
In January he saves £60.
Over the first year of saving money, what fraction of the cost has he saved?

Question 8: In Victoria's class, there are 30 students.
Explain why Victoria must be wrong.

Exactly $\frac{2}{7}$ of the students in the class wear glasses.

Question 9: Nigel has completed his homework.
Can you spot any mistakes?

In a bag there are 80 beads.
There are 35 yellow beads.
There are 17 red beads.
The rest of the beads are white.
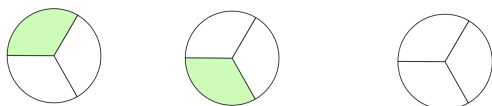
$$35 + 17 = 52$$
$$80 - 52 = 38$$

Work out what fraction of the beads are white.
Give your answer in its simplest form.

$$\frac{38}{80} = \frac{19}{40}$$

Adding Fractions: Same Denominators
Video 132 on www.corbettmaths.com

Workout

Question 1:   Work out the following additions.
You may use the shapes to help.

(a)

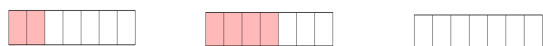$\frac{1}{3}$ + $\frac{1}{3}$ =
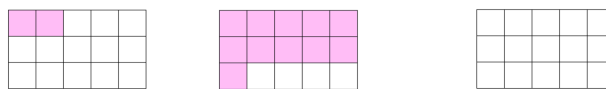
(b)

$\frac{2}{5}$ + $\frac{1}{5}$ =

(c)

$\frac{2}{7}$ + $\frac{4}{7}$ =

(d)

$\frac{2}{15}$ + $\frac{11}{15}$ =

Question 2:   Work out the following additions

(a) $\frac{1}{5} + \frac{1}{5}$ (b) $\frac{3}{11} + \frac{2}{11}$ (c) $\frac{1}{9} + \frac{7}{9}$ (d) $\frac{3}{7} + \frac{3}{7}$

(e) $\frac{6}{11} + \frac{2}{11}$ (f) $\frac{7}{13} + \frac{4}{13}$ (g) $\frac{3}{5} + \frac{1}{5}$ (h) $\frac{10}{21} + \frac{10}{21}$

Question 3:   Work out the following subtractions

(a) $\frac{3}{5} - \frac{1}{5}$ (b) $\frac{6}{7} - \frac{2}{7}$ (c) $\frac{4}{5} - \frac{3}{5}$ (d) $\frac{7}{13} - \frac{1}{13}$

(e) $\frac{9}{11} - \frac{6}{11}$ (f) $\frac{16}{21} - \frac{8}{21}$ (g) $\frac{5}{6} - \frac{5}{6}$ (h) $\frac{16}{25} - \frac{9}{25}$

Question 4:   Work out the following additions and subtractions
Simplify your answers if possible

(a) $\frac{1}{4} + \frac{1}{4}$ (b) $\frac{5}{6} - \frac{1}{6}$ (c) $\frac{3}{8} + \frac{3}{8}$ (d) $\frac{7}{10} - \frac{3}{10}$

(e) $\frac{2}{9} + \frac{4}{9}$ (f) $\frac{3}{20} + \frac{7}{20}$ (g) $\frac{1}{12} + \frac{5}{12}$ (h) $\frac{17}{30} - \frac{7}{30}$

(i) $\dfrac{19}{20} - \dfrac{7}{20}$ (j) $\dfrac{11}{18} + \dfrac{5}{18}$ (k) $\dfrac{9}{16} - \dfrac{7}{16}$ (l) $\dfrac{19}{80} + \dfrac{31}{80}$

Question 5:   Work out the following additions.

(a) $\dfrac{2}{3} + \dfrac{2}{3}$ (b) $\dfrac{4}{5} + \dfrac{3}{5}$ (c) $\dfrac{7}{10} + \dfrac{4}{10}$ (d) $\dfrac{3}{8} + \dfrac{5}{8}$

(e) $\dfrac{9}{11} + \dfrac{10}{11}$ (f) $\dfrac{9}{20} + \dfrac{13}{20}$ (g) $\dfrac{8}{13} + \dfrac{6}{13}$ (h) $\dfrac{41}{50} + \dfrac{19}{50}$

Apply

Question 1:   On Monday, James ate $\dfrac{1}{8}$ of a cake.

On Tuesday, he ate $\dfrac{3}{8}$ of the same cake.

In total, how much of the cake has James eaten?

Question 2:   At a rugby match, $\dfrac{3}{5}$ of the crowd are male.

What fraction of the crowd are female?

Question 3:   In one season, a netball team won $\dfrac{4}{7}$ of their matches.

They drew $\dfrac{2}{7}$ of their matches.

What fraction of the matches did they lose?

Question 4:   In a school, pupils study French, German or Spanish.

$\dfrac{1}{9}$ of the pupils study Spanish.
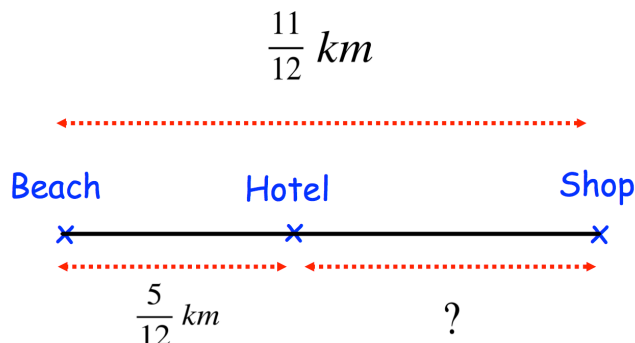
Half of the remaining pupils study French.

What fraction of the pupils study French?

Question 5: Find the distance from the hotel to the shop.

$$\frac{11}{12} \ km$$

Beach   Hotel   Shop

$$\frac{5}{12} \ km \qquad\qquad ?$$

Question 6: A wooden rod is $\dfrac{4}{5} \ m$ long.

Find the total length of 4 wooden rods.

Question 7: Three fractions have been added together and the answer is $\dfrac{17}{20}$

Write down three fractions that may have been added together.

Question 8: James adds together two fractions.
Both fractions are the same.

The answer is $1\dfrac{5}{9}$

Find the two fractions.

Question 9: Will has completed his homework.
Can you spot any mistakes?

Question 1

Work out

$$\frac{11}{15} - \frac{2}{15}$$

Simplify your answer.

$$\frac{13}{15}$$

Question 2

There are red counters, blue counters and green counters in a bag.
⅝ of the counters are red.
⅛ of the counters are blue.

What fraction of the counters are green?

$$\frac{6}{8} = \frac{3}{4}$$