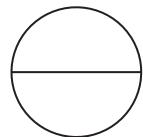


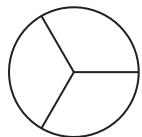
## 9. [Fractions]

### Skill 9.1 Recognising fractions as part of a whole.

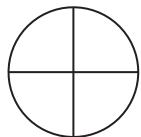
MM2.2 1 1 2 2 3 3 4 4  
MM3.1 1 1 2 2 3 3 4 4



**halves** - 2 equal parts



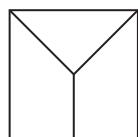
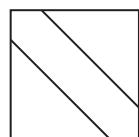
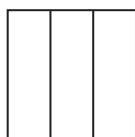
**thirds** - 3 equal parts



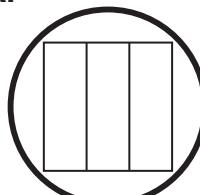
**quarters** - 4 equal parts

- Find the number of parts in each shape.
- Match the number of parts with the fraction given.
- Check that the parts are of equal size.

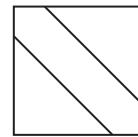
**Q.** Circle the picture that shows thirds.



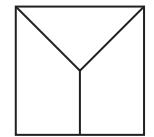
**A.**



3 equal parts

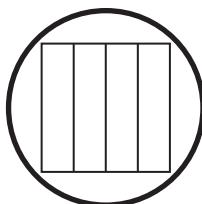
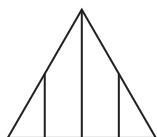
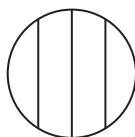


3 unequal parts

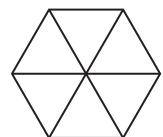
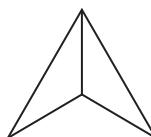


3 unequal parts

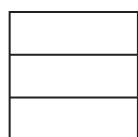
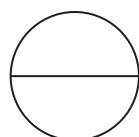
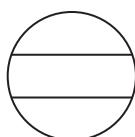
**a)** Circle the picture that shows quarters.



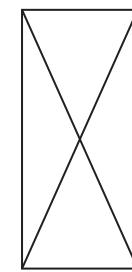
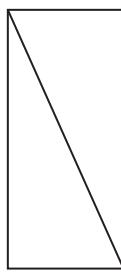
**b)** Circle the picture that shows halves.



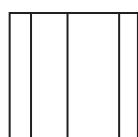
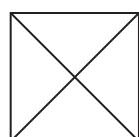
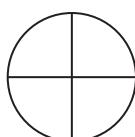
**c)** Circle the picture that shows thirds.



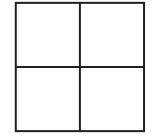
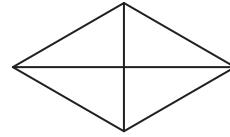
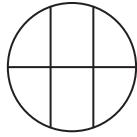
**d)** Circle the picture that shows halves.



**e)** Circle the pictures that show quarters.



**f)** Circle the pictures that show quarters.



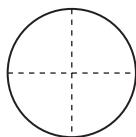
**Skill 9.2** Illustrating fractions as part of a whole by shading parts of a diagram (1).

MM2.2 1 1 2 2 3 3 4 4  
MM3.1 1 1 2 2 3 3 4 4

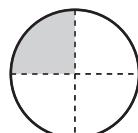
one half	one third	one quarter	one fifth	one sixth	one seventh	one eighth	one ninth
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$	$\frac{1}{7}$	$\frac{1}{8}$	$\frac{1}{9}$

- First find the smallest part that the shape is divided into.
- Colour the number of parts needed.

**Q.** Colour one quarter of the circle.



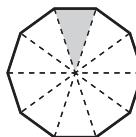
**A.**



[any sector]

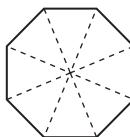
the smallest part = one quarter

**a)** Colour one tenth of the decagon.

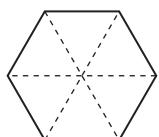


[any small triangle]

**b)** Colour one eighth of the octagon.



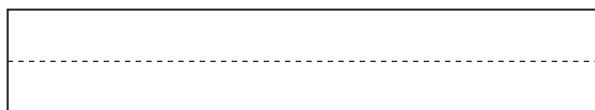
**c)** Colour one sixth of the hexagon.



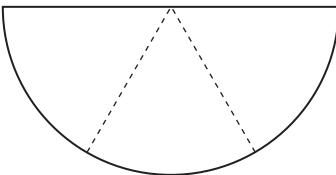
**d)** Colour one seventh of the rectangle.



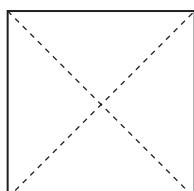
**e)** Colour one half of the rectangle.



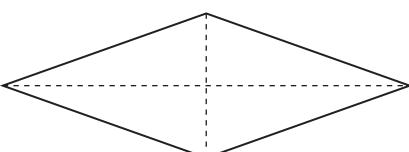
**f)** Colour one third of the semicircle.



**g)** Colour two quarters of the square.



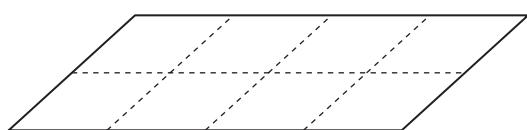
**h)** Colour three quarters of the rhombus.



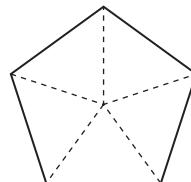
**Skill 9.2** Illustrating fractions as part of a whole by shading parts of a diagram (2).

MM2.2 1 2 2 3 3 4 4  
MM3.1 1 1 2 2 3 3 4 4

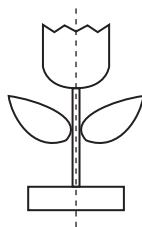
i) Colour five eighths of the parallelogram.



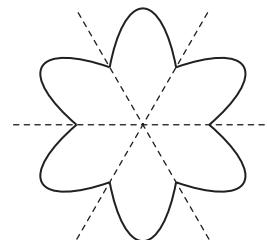
j) Colour three fifths of the pentagon.



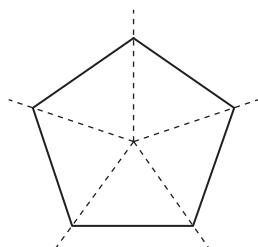
k) Colour  $\frac{1}{2}$  of the flower.



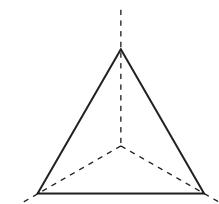
l) Colour  $\frac{1}{6}$  of the flower.



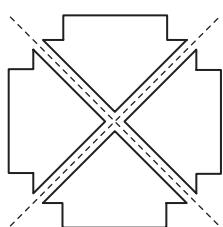
m) Colour  $\frac{3}{5}$  of the pentagon.



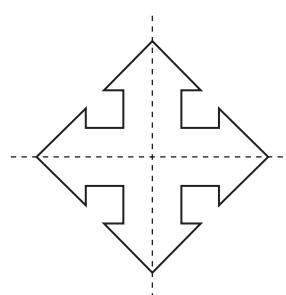
n) Colour  $\frac{2}{3}$  of the triangle.



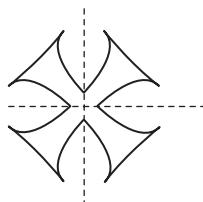
o) Colour  $\frac{3}{4}$  of the symbol.



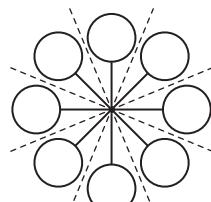
p) Colour  $\frac{1}{4}$  of the symbol.



q) Colour  $\frac{2}{4}$  of the emblem.



r) Colour  $\frac{5}{8}$  of the symbol.



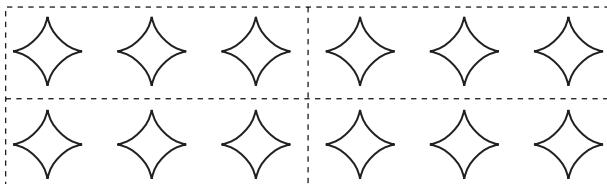
**Skill 9.3** Illustrating fractions as part of a group by shading parts of a diagram (1).

MM2.2 11 22 33 44  
MM3.1 11 22 33 44

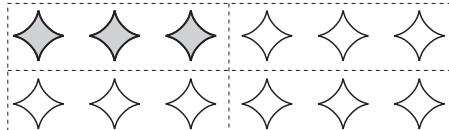
**Hint:** The dotted lines show the collection divided into the parts needed.

- Colour the shapes in the number of parts needed.

**Q.** Colour one quarter of the shapes.

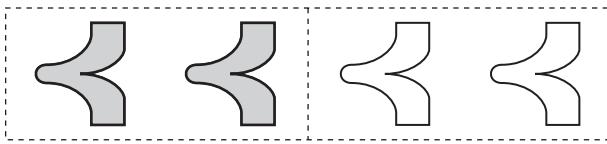


**A.**



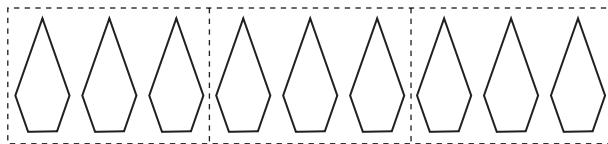
A quarter of  $12 = 12 \div 4 = 3$   
Any 3 shapes are a quarter.

**a)** Colour one half of the shapes.

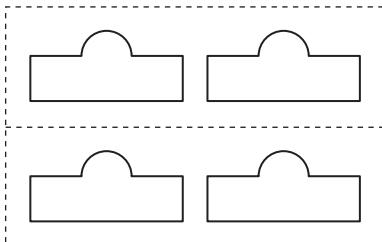


[any 2 shapes]

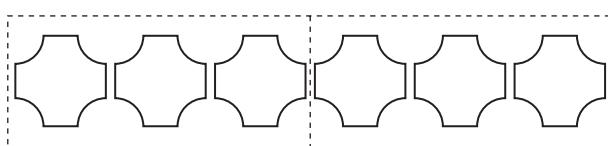
**b)** Colour one third of the shapes.



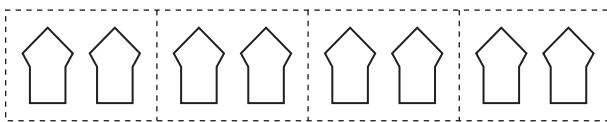
**c)** Colour one half of the shapes.



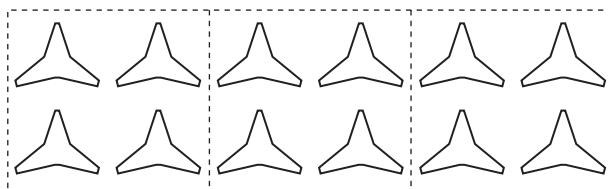
**d)** Colour one half of the shapes.



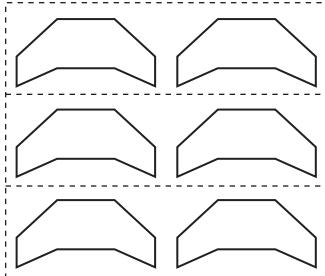
**e)** Colour one quarter of the shapes.



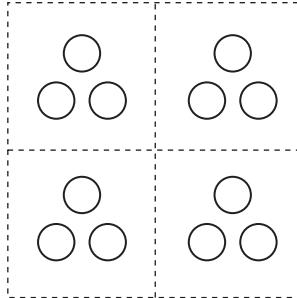
**f)** Colour one third of the shapes.



**g)** Colour one third of the shapes.



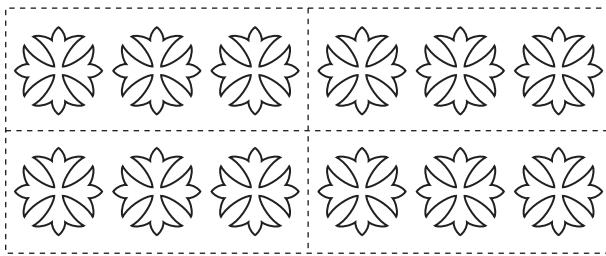
**h)** Colour one quarter of the shapes.



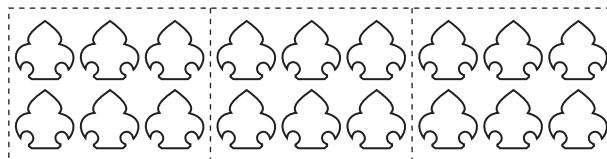
**Skill 9.3** Illustrating fractions as part of a group by shading parts of a diagram (2).

MM2.2 1 2 2 3 3 4 4  
MM3.1 1 2 2 3 3 4 4

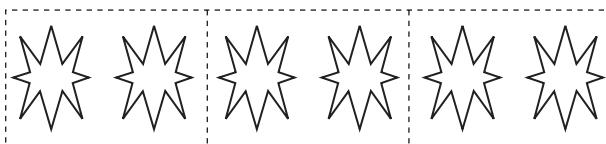
i) Colour one quarter of the shapes.



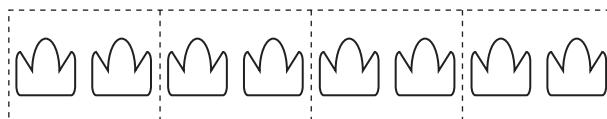
j) Colour one third of the shapes.



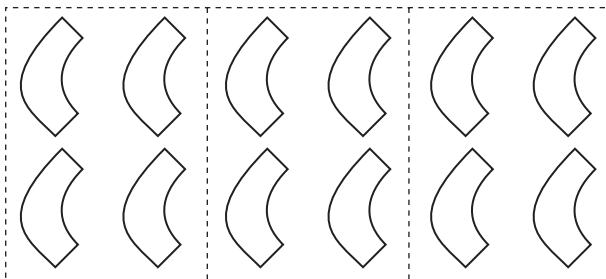
k) Colour two thirds of the shapes.



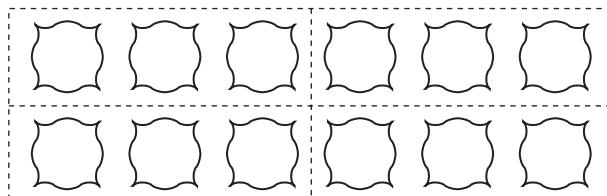
l) Colour three quarters of the shapes.



m) Colour two thirds of the shapes.



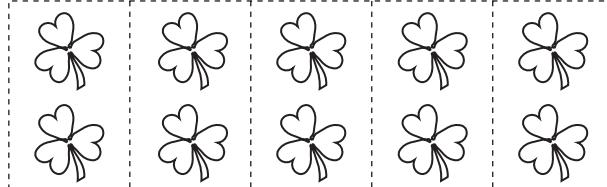
n) Colour three quarters of the shapes.



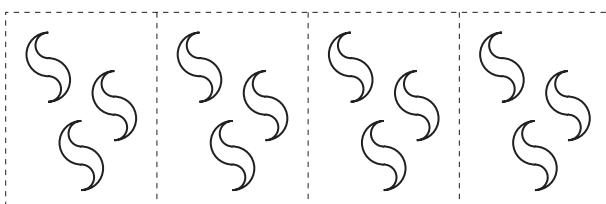
o) Colour two thirds of the shapes.



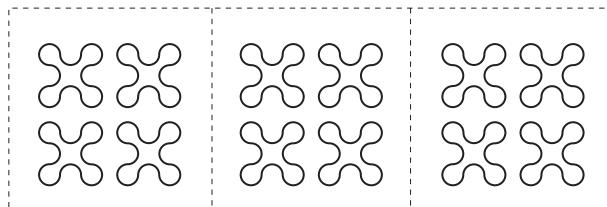
p) Colour two fifths of the shapes.



q) Colour three quarters of the shapes.



r) Colour two thirds of the shapes.



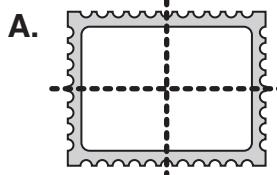
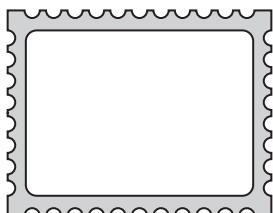
**Skill 9.4** Illustrating fractions as part of a whole by drawing dividing lines in a diagram (1).

MM2.2 11 22 33 44  
MM3.1 11 22 33 44

- Draw a line, or lines, to divide the shape into an equal number of identical parts as needed.  
Example: To divide this shape into halves, draw a vertical line through the middle of the shape.

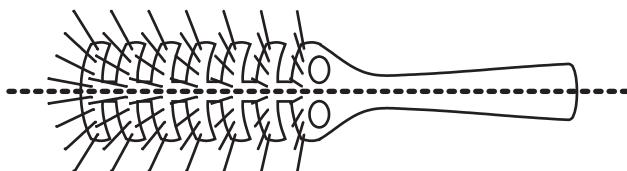


**Q.** Draw lines to divide the stamp into quarters.



Draw a vertical line through the middle of the shape.  
Draw a horizontal line through the middle of the shape.

**a)** Draw a line to divide the hair brush into halves.



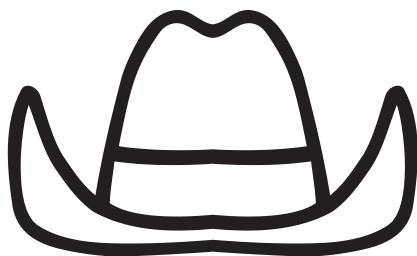
**b)** Draw a line to divide the penguin into halves.



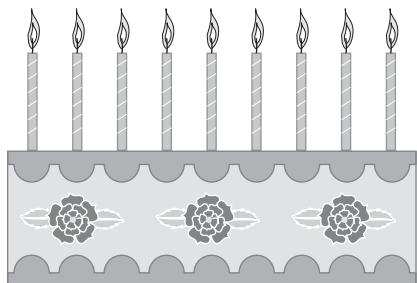
**c)** Draw a line to divide the glass into halves.



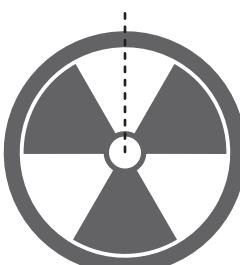
**d)** Draw a line to divide the hat into halves.



**e)** Draw lines to divide the cake into thirds.



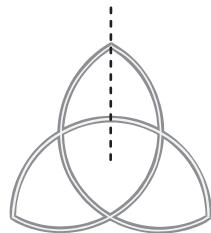
**f)** Draw lines to divide the symbol into thirds.  
[Hint: A line has been drawn for you.]



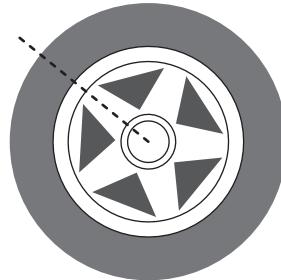
**Skill 9.4** Illustrating fractions as part of a whole by drawing dividing lines in a diagram (2).

MM2.2 1 1 **2** 2 3 3 4 4  
MM3.1 **1** 1 2 2 3 3 4 4

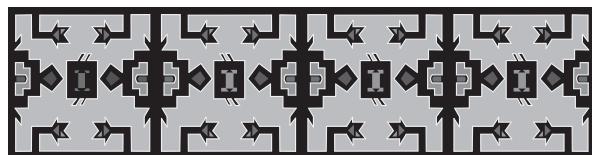
g) Draw lines to divide the symbol into thirds. [Hint: A line has been drawn for you.]



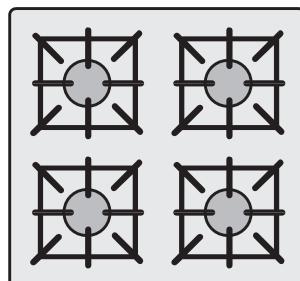
h) Draw lines to divide the tyre into fifths. [Hint: A line has been drawn for you.]



i) Draw lines to divide the rug into quarters.



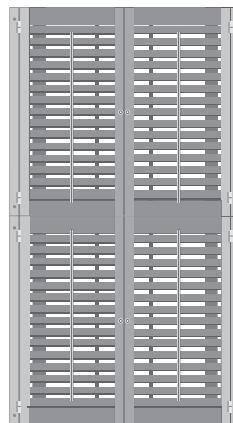
j) Draw lines to divide the stove top into quarters.



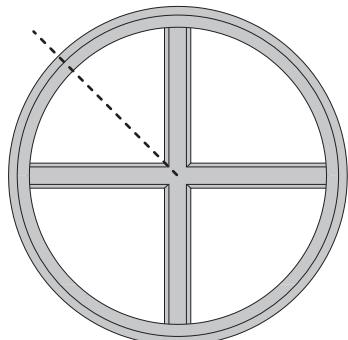
k) Draw lines to divide the coat hanger rack into quarters.



l) Draw lines to divide the window into quarters.

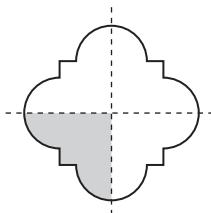


m) Draw lines to divide the round window into eighths.  
[Hint: A line has been drawn for you.]

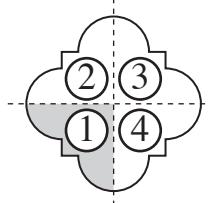


- Count the shaded parts of the whole shape.
- Write this number as the top number of the fraction.
- Count the total number of parts in the whole shape.
- Write this number as the bottom number of the fraction.

Q. Write a fraction for the shaded part.

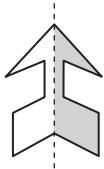


A.  $\frac{1}{4}$



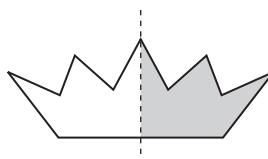
1 out of 4 parts shaded.

a) Write a fraction for the shaded part.



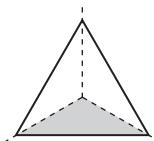
$$\frac{1}{2}$$

b) Write a fraction for the shaded part.



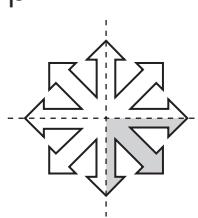
$$\frac{1}{3}$$

c) Write a fraction for the shaded part.



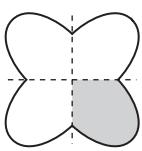
$$\frac{1}{3}$$

d) Write a fraction for the shaded part.



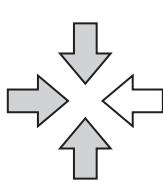
$$\frac{1}{6}$$

e) Write a fraction for the shaded part.



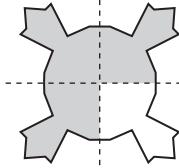
$$\frac{1}{4}$$

f) Write a fraction for the shaded part.



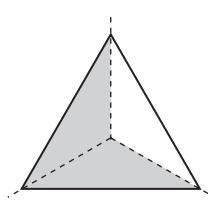
$$\frac{1}{4}$$

g) Write a fraction for the shaded part.



$$\frac{4}{4}$$

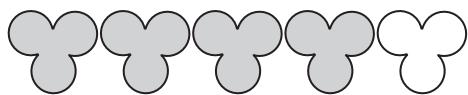
h) Write a fraction for the shaded part.



$$\frac{3}{3}$$

- Count the shaded shapes in the group.
- Write this number as the top number of the fraction.
- Count the total number of shapes in the group.
- Write this number as the bottom number of the fraction.

**Q.** Write a fraction for the shaded part of the group.



**A.**  $\frac{4}{5}$



4 out of 5 shapes are shaded.

**a)** What part of the group is shaded?



**4**

out of

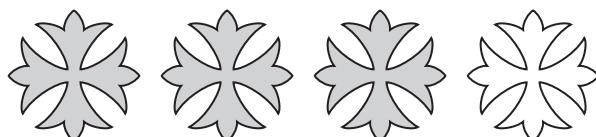
**7**

**b)** What part of the group is shaded?



out of

**c)** What part of the group is shaded?



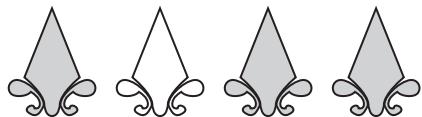
out of

**d)** What part of the group is shaded?



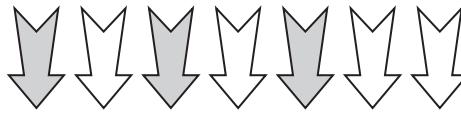
out of

**e)** Write a fraction for the shaded part of the group.



---

**f)** Write a fraction for the shaded part of the group.



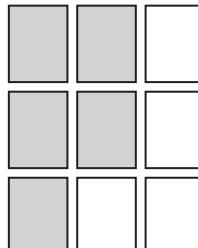
---

**g)** Write a fraction for the shaded part of the group.



---

**h)** Write a fraction for the shaded part of the group.



---

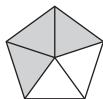
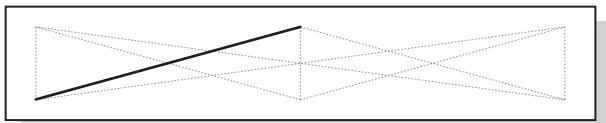
- Join with a line the fraction and the diagram that has a number of parts equal to the bottom number of that fraction.

Q. Match the fractions to the shapes.

$$\frac{3}{5}$$

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

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



A.

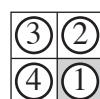
$$\frac{3}{5}$$

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

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



3 parts



4 parts



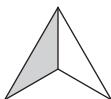
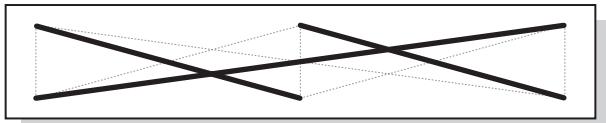
5 parts

a) Match the fractions to the shapes.

$$\frac{1}{2}$$

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

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

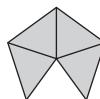
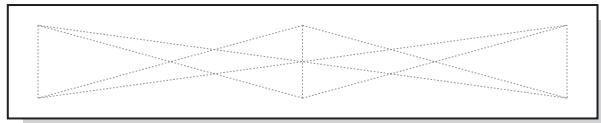


b) Match the fractions to the shapes.

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

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

$$\frac{4}{5}$$

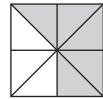
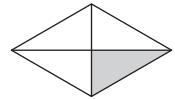
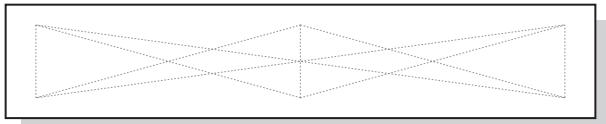


c) Match the fractions to the shapes.

$$\frac{5}{8}$$

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

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

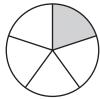
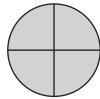
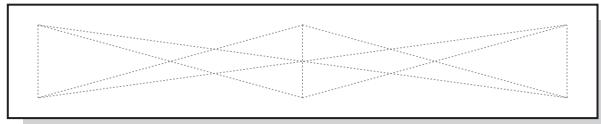


d) Match the fractions to the shapes.

$$\frac{5}{6}$$

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

$$\frac{4}{4}$$

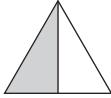
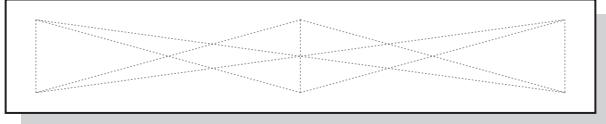


e) Match the fractions to the shapes.

$$\frac{1}{6}$$

$$\frac{1}{2}$$

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

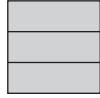
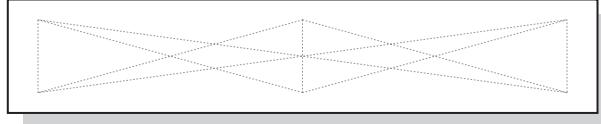


f) Match the fractions to the shapes.

$$\frac{1}{2}$$

$$\frac{3}{3}$$

$$\frac{2}{5}$$



**g)** Match the fractions to the shapes. **h)** Match the fractions to the shapes.

$$\frac{3}{8}$$

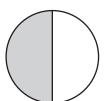
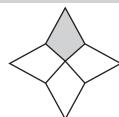
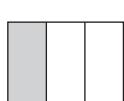
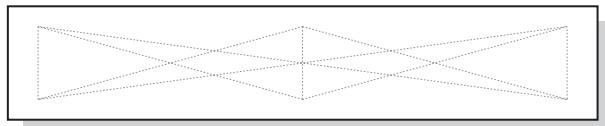
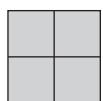
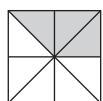
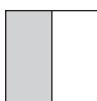
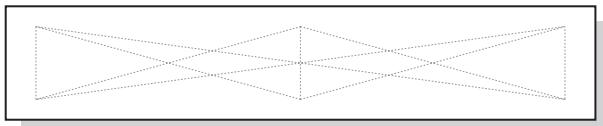
$$\frac{4}{4}$$

$$\frac{1}{2}$$

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

$$\frac{1}{2}$$

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



**i)** Match the fractions to the shapes.

$$\frac{2}{5}$$

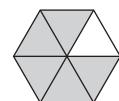
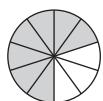
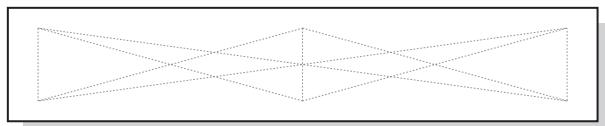
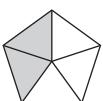
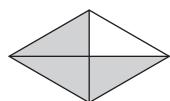
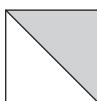
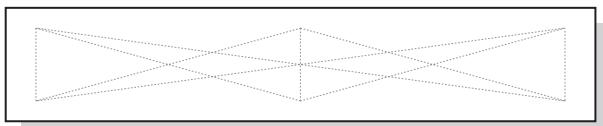
$$\frac{3}{4}$$

$$\frac{1}{2}$$

$$\frac{5}{6}$$

$$\frac{2}{9}$$

$$\frac{7}{10}$$



**k)** Match the fractions to the shapes.

$$\frac{2}{2}$$

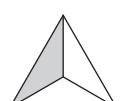
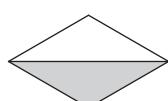
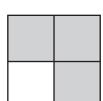
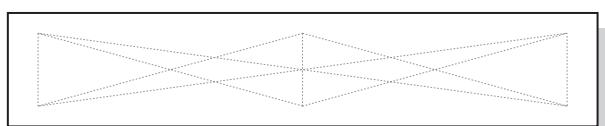
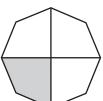
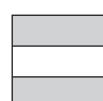
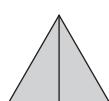
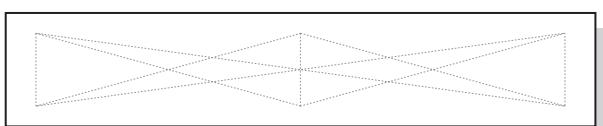
$$\frac{1}{4}$$

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

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

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

$$\frac{1}{2}$$



**m)** Match the fractions to the shapes.

$$\frac{5}{8}$$

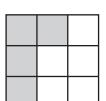
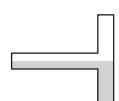
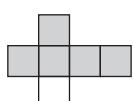
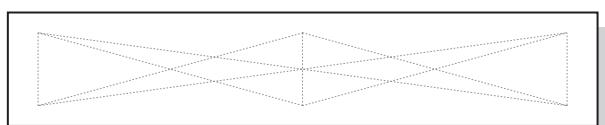
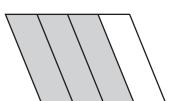
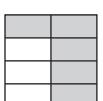
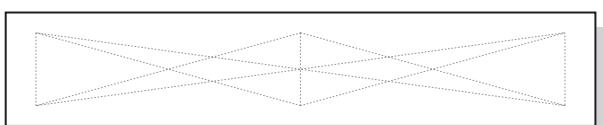
$$\frac{2}{7}$$

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

$$\frac{1}{2}$$

$$\frac{4}{9}$$

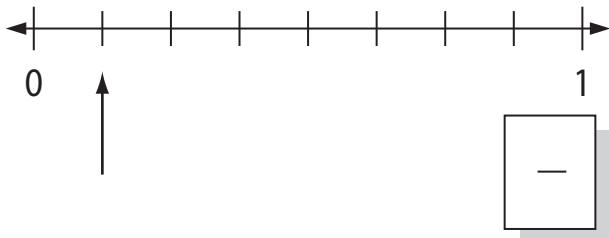
$$\frac{5}{6}$$



**To read a fraction**

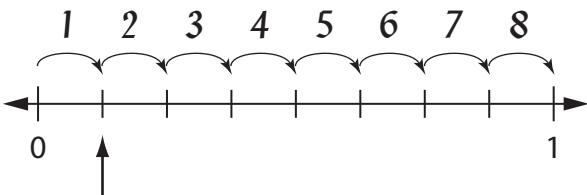
- Count the spaces between 0 and 1.
- Write this number as the bottom number of the fraction.
- Count the spaces to the arrow.
- Write this number as the top number of the fraction.

Q. What fraction is shown by the arrow on the number line?

**To illustrate a fraction**

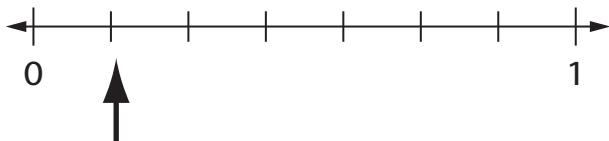
- Check that the number line has the same number of spaces as shown by the bottom number of the fraction.
- Count the number of spaces as shown by the top number and draw an arrow.

A.  $\frac{1}{8}$

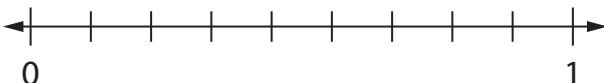


There are 8 spaces between 0 and 1.

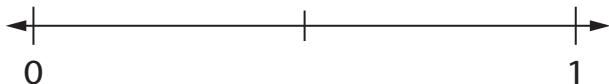
a) Show with an arrow the fraction  $\frac{1}{7}$  on the number line.



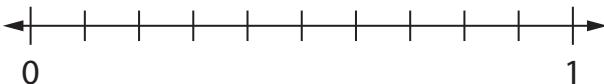
b) Show with an arrow the fraction  $\frac{1}{9}$  on the number line.



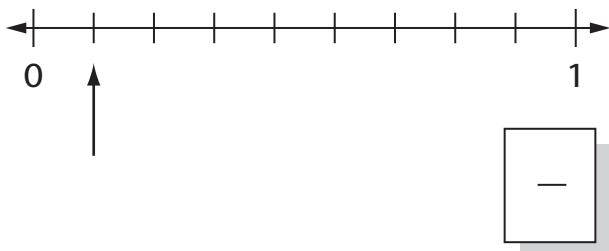
c) Show with an arrow the fraction  $\frac{1}{2}$  on the number line.



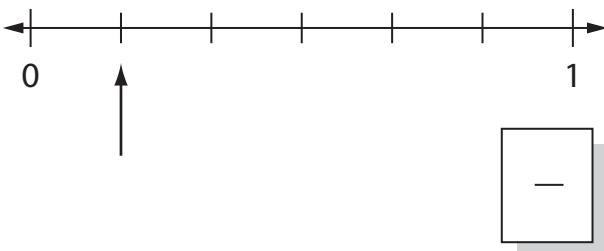
d) Show with an arrow the fraction  $\frac{1}{10}$  on the number line.



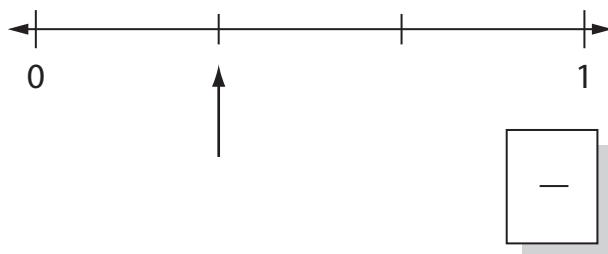
e) What fraction is shown by the arrow on the number line?



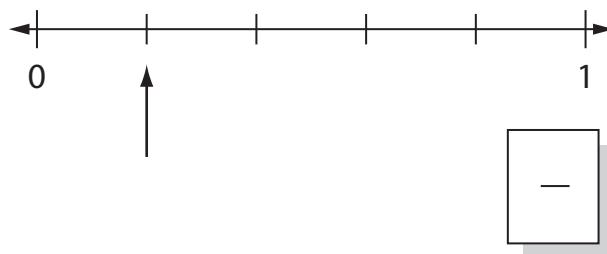
f) What fraction is shown by the arrow on the number line?



g) What fraction is shown by the arrow on the number line?



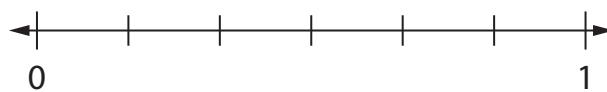
h) What fraction is shown by the arrow on the number line?



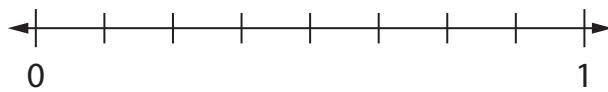
i) Show with an arrow the fraction  $\frac{1}{5}$  on the number line.



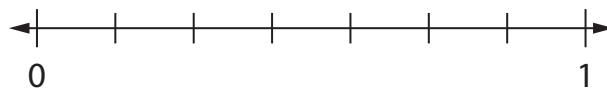
j) Show with an arrow the fraction  $\frac{5}{6}$  on the number line.



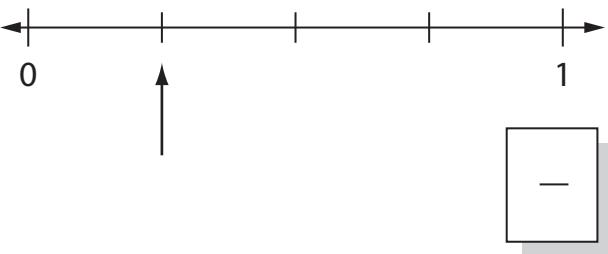
k) Show with an arrow the fraction  $\frac{3}{8}$  on the number line.



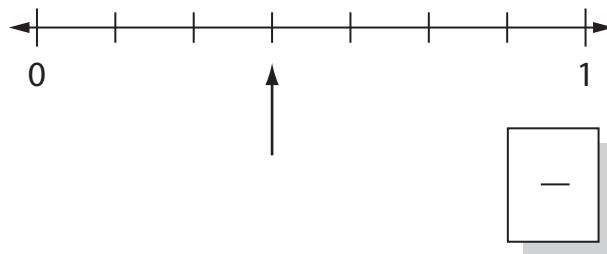
l) Show with an arrow the fraction  $\frac{4}{7}$  on the number line.



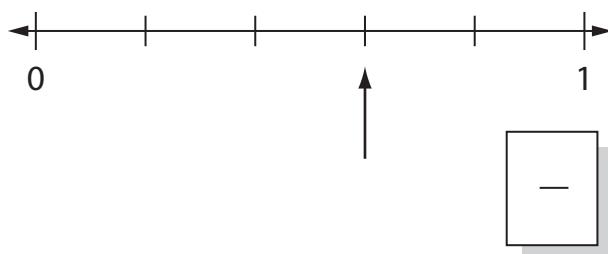
m) What fraction is shown by the arrow on the number line?



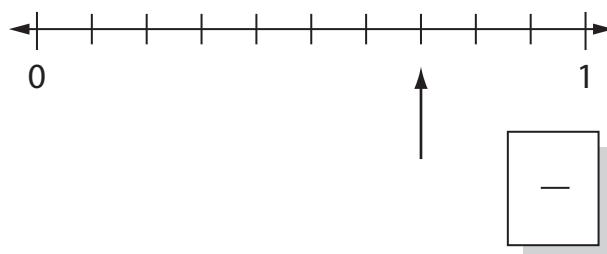
n) What fraction is shown by the arrow on the number line?

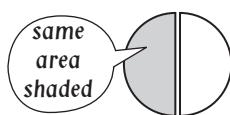


o) What fraction is shown by the arrow on the number line?



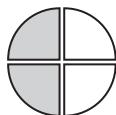
p) What fraction is shown by the arrow on the number line?





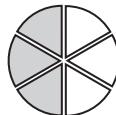
2 equal parts  
1 part shaded

$\frac{1}{2}$  of the circle is shaded



4 equal parts  
2 parts shaded

$\frac{2}{4}$  of the circle is shaded



6 equal parts  
3 parts shaded

$\frac{3}{6}$  of the circle is shaded



8 equal parts  
4 parts shaded

$\frac{4}{8}$  of the circle is shaded

The fractions  $\frac{1}{2}$ ,  $\frac{2}{4}$ ,  $\frac{3}{6}$  and  $\frac{4}{8}$  are all equivalent.

You can write:  $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

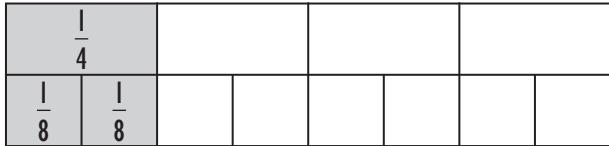
### To find an equivalent fraction from a given diagram

- Read the shaded fractions from both fraction bars.
- Complete the missing number in one of the fractions.

### To find an equivalent fraction by drawing a diagram

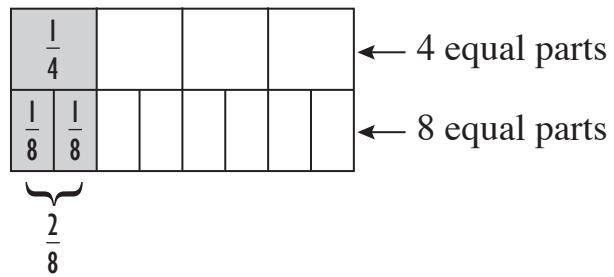
- Draw two fraction bars one under the other.
- Divide each box in equal parts, as shown by the denominators.
- Shade both fraction bars to show the given fraction.
- Read the second fraction from the bottom fraction bar.

Q. Complete the equivalent fractions.

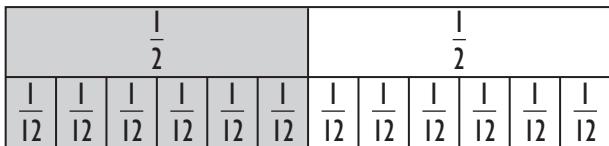


$$\frac{1}{4} = \frac{\square}{8}$$

A.  $\frac{1}{4} = \frac{2}{\square}$



a) Complete the equivalent fractions.



$$\frac{1}{2} = \frac{6}{\square}$$

b) Complete the equivalent fractions.



$$\frac{2}{3} = \frac{\square}{9}$$

c) Complete the equivalent fractions.

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$

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

d) Complete the equivalent fractions.

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

$$\frac{1}{2} = \frac{\square}{6}$$

e) Complete the equivalent fractions.

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

$$\frac{4}{10} = \frac{\square}{5}$$

f) Complete the equivalent fractions.

$\frac{1}{9}$								
$\frac{1}{3}$								

$$\frac{3}{9} = \frac{\square}{3}$$

g) Complete the equivalent fractions.

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

h) Complete the equivalent fractions.

$$\frac{1}{2} = \frac{\square}{18}$$

i) Complete the equivalent fractions.

$$\frac{2}{5} = \frac{\square}{15}$$

j) Complete the equivalent fractions.

$$\frac{9}{12} = \frac{\square}{4}$$

k) Complete the equivalent fractions.

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

l) Complete the equivalent fractions.

$$\frac{12}{16} = \frac{\square}{8}$$

**Using fraction bars**

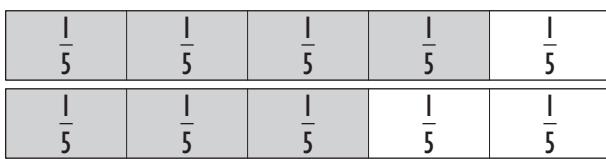
- Compare the size of the two shaded areas.
- Use  $<$  if the area showing the first fraction is smaller than the area showing the second fraction.
- Use  $=$  if the areas are equal.
- Use  $>$  if the area showing the first fraction is greater than the area showing the second fraction.

**Using a number line**

- Compare the position of the fractions on the number line.
- Use  $<$  if the first fraction is to the left of the second fraction on the number line.
- Use  $=$  if the two fractions are at the same point on the number line.
- Use  $>$  if the first fraction is to the right of the second fraction on the number line.

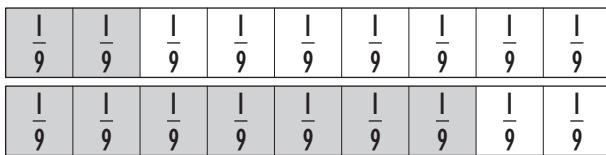
**Hint:** The fraction with the larger numerator is greater.

**Q.** Use  $<$ ,  $=$  or  $>$  to make this true.

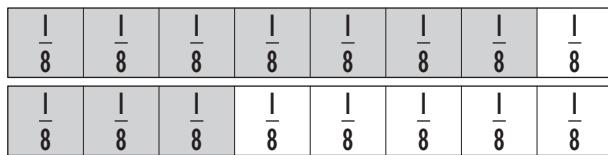


**A.**  $\frac{4}{5} > \frac{3}{5}$  4 is greater than 3.

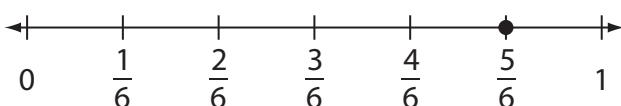
**a)** Use  $<$ ,  $=$  or  $>$  to make this true.



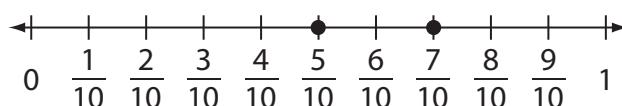
**b)** Use  $<$ ,  $=$  or  $>$  to make this true.



**c)** Use  $<$ ,  $=$  or  $>$  to make this true.



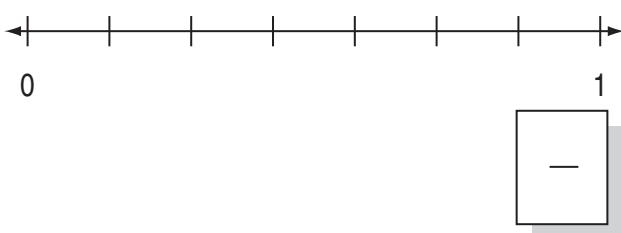
**d)** Use  $<$ ,  $=$  or  $>$  to make this true.



**e)** Show with arrows the fractions

$\frac{5}{7}$  and  $\frac{1}{7}$  on the number line.

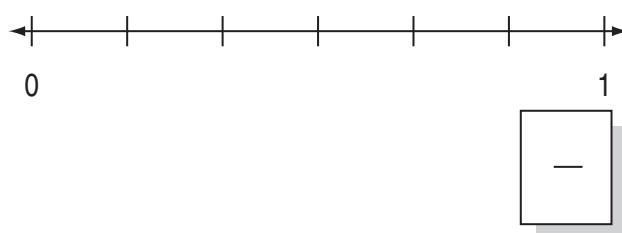
Which fraction is greater?



**f)** Show with arrows the fractions

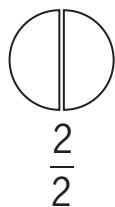
$\frac{3}{6}$  and  $\frac{5}{6}$  on the number line.

Which fraction is greater?

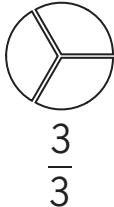


A whole amount is made out of:

two halves



three thirds



four quarters



five fifths



six sixths



seven sevenths



eight eighths



nine ninths

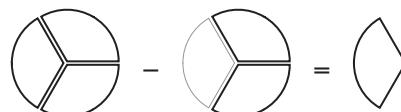


- Subtract the fraction from the whole amount.

Q. Two thirds of the students in the class can swim. What fraction of the students cannot swim?

—

A. one whole – two thirds =  $\frac{1}{3}$



a) Lou has painted one half of the wall. What fraction of the wall is left to paint?

one whole – one half =

$\frac{1}{2}$

b) David has finished one half of his test. What fraction of his test is left to do?

—

c) Loretta has eaten three quarters of the box of chocolates. What fraction of the box of chocolates remains?

—

d) Matthew blew out five sixths of the candles on his cake. What fraction of the candles are left to blow out?

—

e) Two fifths of the animals at the zoo are mammals. What fraction of the animals are not mammals?

—

f) Dad finished unpacking three eighths of the trunk. What fraction of the trunk is left to unpack?

—

g) Five sevenths of the gym floor has been cleaned. What fraction of the floor is left to clean?

—

h) Laura learned seven tenths of the song on the piano. What fraction of the song is left to learn?

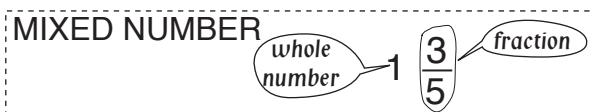
—

**To read a mixed number**

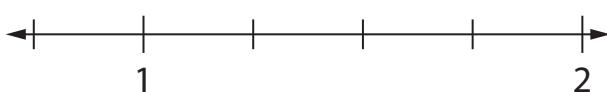
- Write the number before the arrow as the whole number.
- Count the spaces between that whole number and the next number.
- Write this number as the bottom number of the fraction.
- Count the spaces from the whole number to the arrow.
- Write this number as the top number of the fraction.

**To illustrate a mixed number**

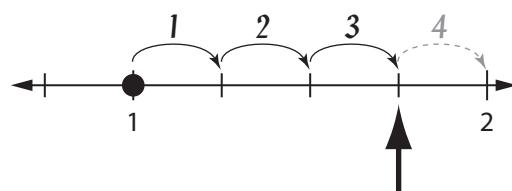
- Check that the number line has the same number of spaces as shown by the bottom number of the fraction.
- Mark the whole number of the mixed number on the line.
- Count the spaces as shown by the top number and draw an arrow.



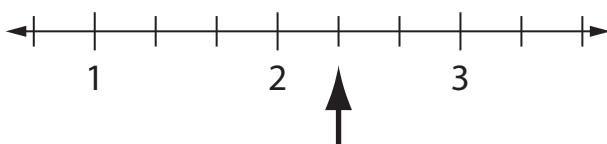
Q. Show with an arrow  $1\frac{3}{4}$  on the number line.



A.



a) Show with an arrow  $2\frac{1}{3}$  on the number line.



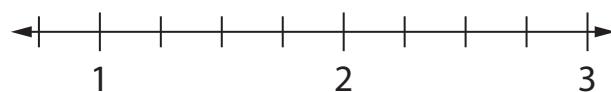
b) Show with an arrow  $2\frac{1}{2}$  on the number line.



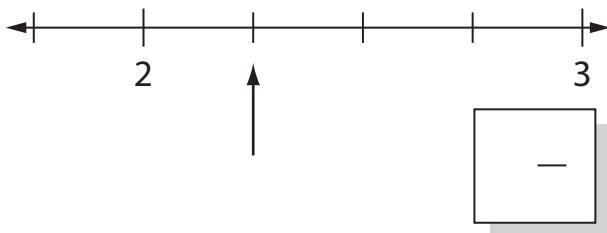
c) Show with an arrow  $1\frac{2}{3}$  on the number line.



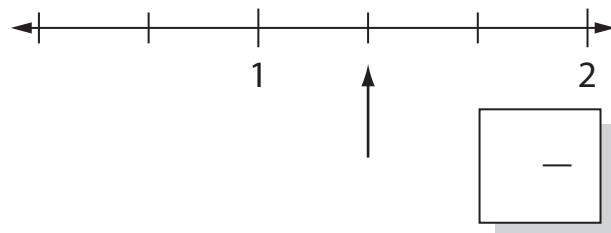
d) Show with an arrow  $2\frac{3}{4}$  on the number line.



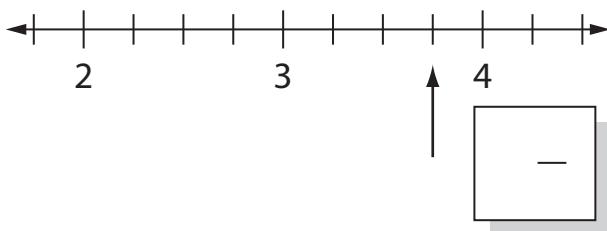
e) What mixed number is shown by the arrow on the number line?



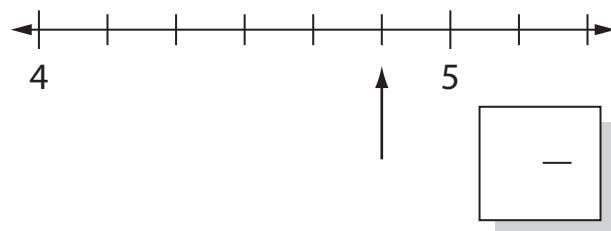
f) What mixed number is shown by the arrow on the number line?



g) What mixed number is shown by the arrow on the number line?



h) What mixed number is shown by the arrow on the number line?

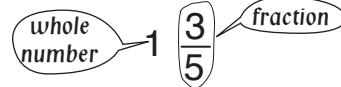


### Skill 9.13 Recognising mixed numbers in a diagram.

MM2.2 1 1 2 2 3 3 4  
MM3.1 1 1 2 3 3 4 4

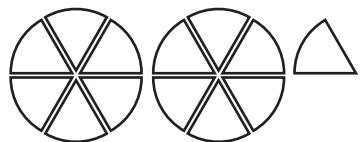
- Count the number of whole circles.
- Write this number first.
- Count the total number of parts in a complete circle.
- Write this number as the bottom number of the fraction.
- Count the number of parts in the incomplete circle.
- Write this number as the top number of the fraction.

#### MIXED NUMBER



Read as: "One and three fifths"

Q. Write a mixed number to match this picture.

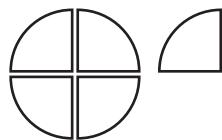


A.  $2 \frac{1}{6}$



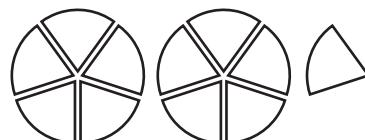
There are 2 whole circles.  
There are 6 parts in a circle.  
There is 1 part in the incomplete circle.

a) Write a mixed number to match this picture.



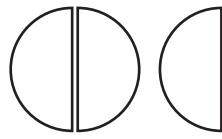
$1 \frac{1}{4}$

b) Write a mixed number to match this picture.



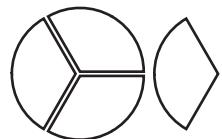
—

c) Write a mixed number to match this picture.



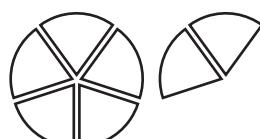
—

d) Write a mixed number to match this picture.



—

e) Write a mixed number to match this picture.



—

f) Write a mixed number to match this picture.



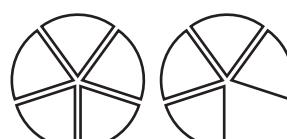
—

g) Write a mixed number to match this picture.



—

h) Write a mixed number to match this picture.



—

## Skill 9.14 Comparing two fractions with the same numerators.

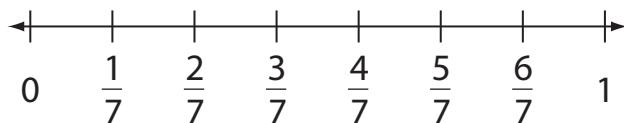
MM2.2 11 22 33 44  
MM3.1 11 22 33 44

- Compare the position of the fractions on the number line.
- Use  $<$  if the first fraction is to the left of the second fraction on the number line.
- Use  $=$  if the two fractions are at the same point on the number line.
- Use  $>$  if the first fraction is to the right of the second fraction on the number line.

$<$	is less than
$=$	is equal to
$>$	is greater than

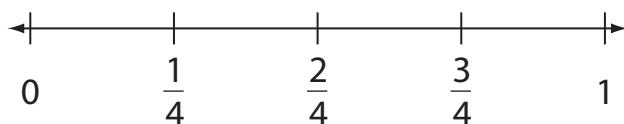
Hint: The fraction with the smaller denominator is larger.

Q. Use  $<$ ,  $=$  or  $>$  to make this true.

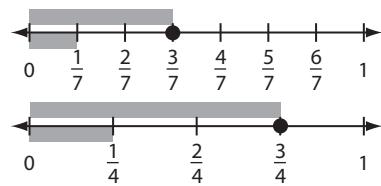


A.  $\frac{3}{7} \square \frac{3}{4}$

One seventh is smaller than one fourth.  
Therefore 3 sevenths is less than 3 fourths.



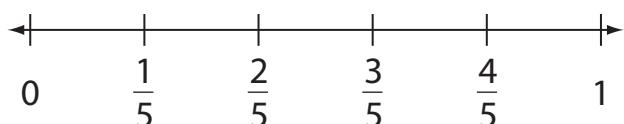
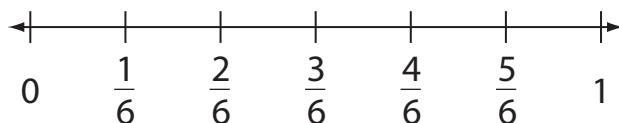
$\frac{3}{7}$    $\frac{3}{4}$



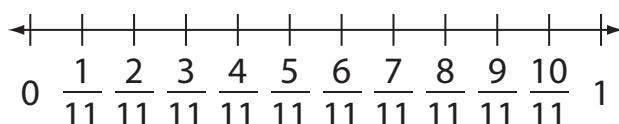
a) Use  $<$ ,  $=$  or  $>$  to make this true.



b) Use  $<$ ,  $=$  or  $>$  to make this true.

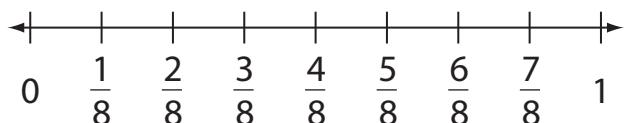


$\frac{2}{3}$    $\frac{2}{5}$

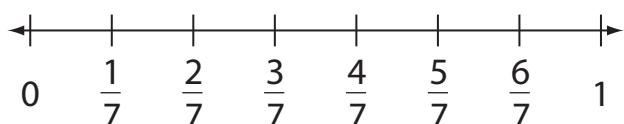
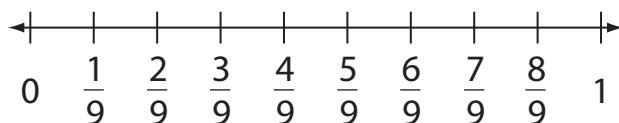


$\frac{5}{6}$    $\frac{5}{11}$

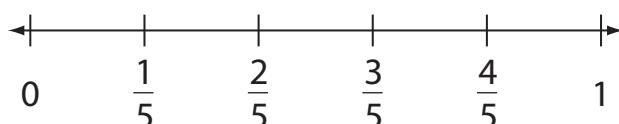
c) Use  $<$ ,  $=$  or  $>$  to make this true.



d) Use  $<$ ,  $=$  or  $>$  to make this true.



$\frac{3}{8}$    $\frac{3}{7}$



$\frac{2}{9}$    $\frac{2}{5}$

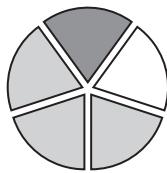
**To add two fractions by using parts of a whole**

- Colour the fraction bar to represent the second fraction.
- Count the number of shaded parts.
- Write this number as the top number of the result.
- Count the total number of parts.
- Write this number as the bottom number of the result.

**To subtract two fractions by using parts of a whole**

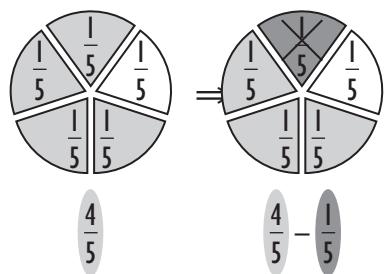
- Count the total number of light shaded parts.
- Write this number as the top number of the result.
- Count the total number of parts.
- Write this number as the bottom number of the result.

**Q.** Complete the subtraction.

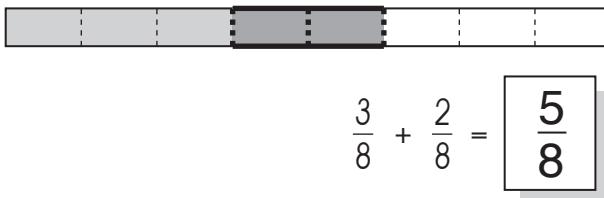


$$\frac{4}{5} - \frac{1}{5} = \boxed{\phantom{00}}$$

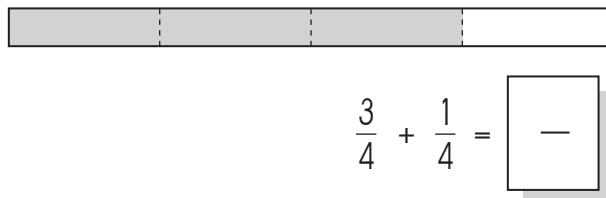
A.  $\frac{4}{5} - \frac{1}{5} =$   
 $= \frac{4}{5} - \frac{1}{5}$   
 $= \frac{3}{5}$



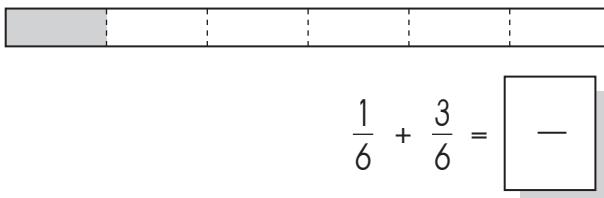
**a)** Shade to complete the sum.



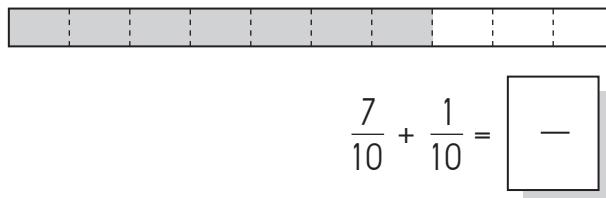
**b)** Shade to complete the sum.



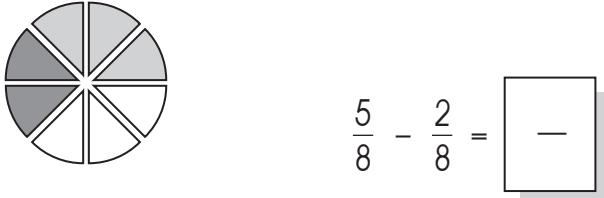
**c)** Shade to complete the sum.



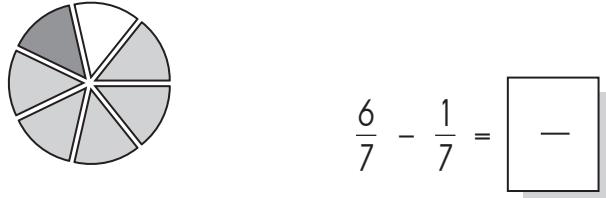
**d)** Shade to complete the sum.



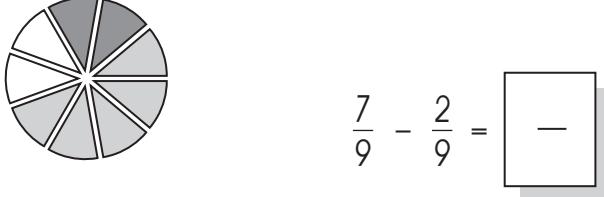
**e)** Shade to complete the sum.



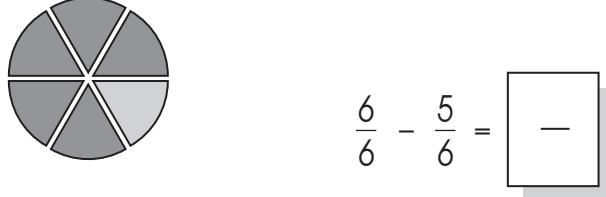
**f)** Shade to complete the sum.



**g)** Shade to complete the sum.



**h)** Shade to complete the sum.



## Skill 9.16 Adding and subtracting fractions with the same denominators.

MM2.2 11 22 33 44  
MM3.1 11 22 33 44

- Add or subtract the numerators (top numbers of the fractions).
- Copy the denominator in the result.

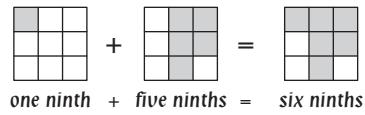
Q.  $\frac{1}{9} + \frac{5}{9} =$

A.  $\frac{6}{9}$

Add the fractions:

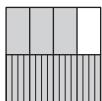
One ninth plus five ninths is six ninths.

Add only the top numbers.

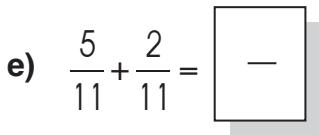


$$\frac{1}{9} + \frac{5}{9} = \frac{6}{9}$$

a)  $\frac{7}{8} - \frac{4}{8} =$

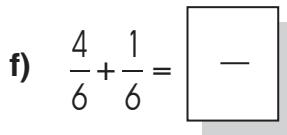


b)  $\frac{1}{5} + \frac{2}{5} =$



d)  $\frac{4}{10} + \frac{5}{10} =$

c)  $\frac{3}{7} + \frac{3}{7} =$



g)  $\frac{1}{4} + \frac{1}{4} =$

h)  $\frac{4}{9} + \frac{4}{9} =$

i)  $\frac{1}{12} + \frac{9}{12} =$

j)  $\frac{5}{7} - \frac{1}{7} =$

k)  $\frac{8}{9} - \frac{2}{9} =$

l)  $\frac{7}{12} - \frac{2}{12} =$

m)  $\frac{4}{4} - \frac{1}{4} =$

n)  $\frac{9}{10} - \frac{8}{10} =$

o)  $\frac{4}{5} - \frac{2}{5} =$