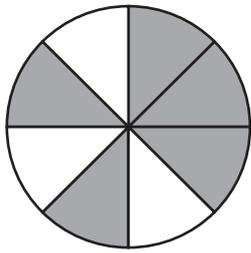


Working with fractions – modelling fractions

A fraction is a part of a whole. This circle had been divided into 8 pieces and has 5 pieces shaded.

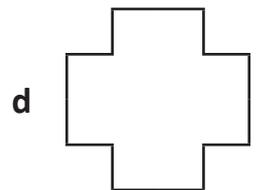
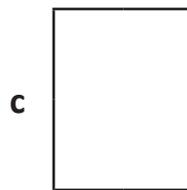
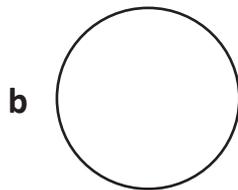
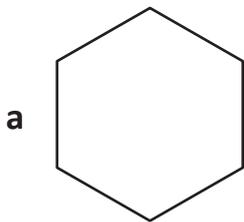


$$\frac{5}{8} = \frac{5 \text{ shaded parts}}{8 \text{ parts altogether}}$$

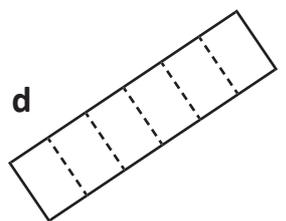
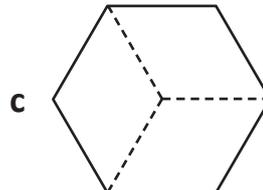
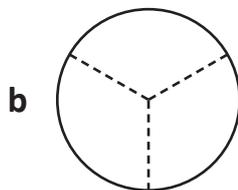
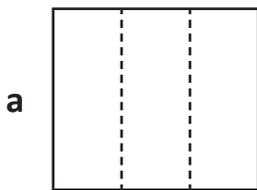


The top number is the numerator, the bottom number is the denominator.

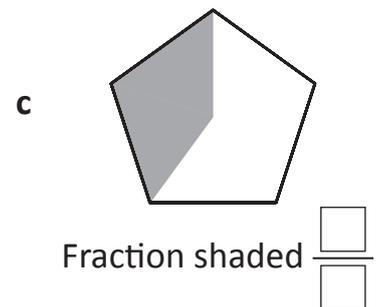
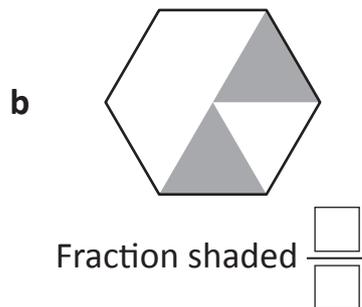
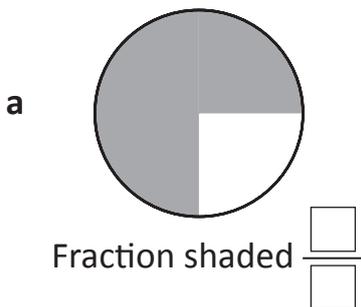
1 Divide each shape into quarters. Shade one quarter:



2 Shade one third on each shape:



3 What fraction is shaded?

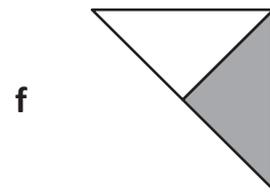
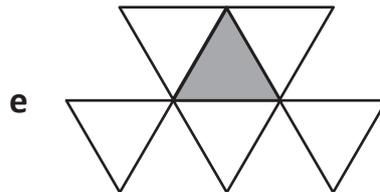
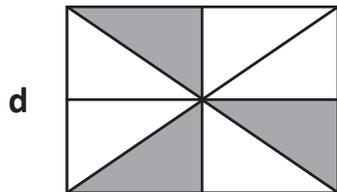
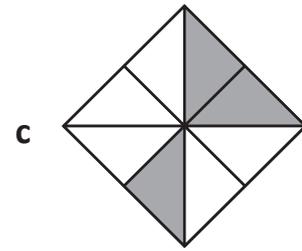


4 If this is $\frac{1}{3}$ of a shape, what does the whole shape look like?

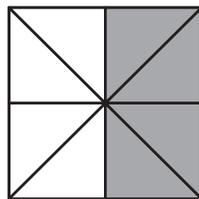


Working with fractions – modelling fractions

5 Complete the table for each shape.

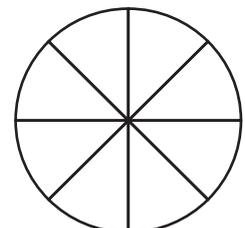
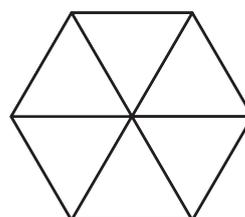
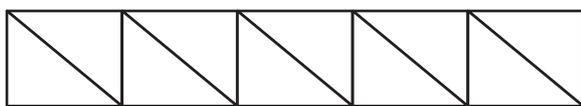
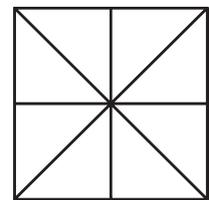
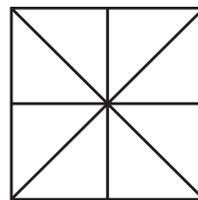
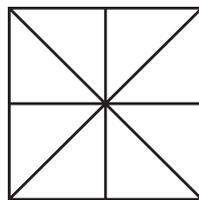
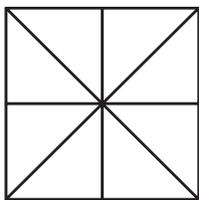


Shape	a	b	c	d	e	f
Fraction that is shaded	—	—	—	—	—	—
Fraction that is unshaded	—	—	—	—	—	—

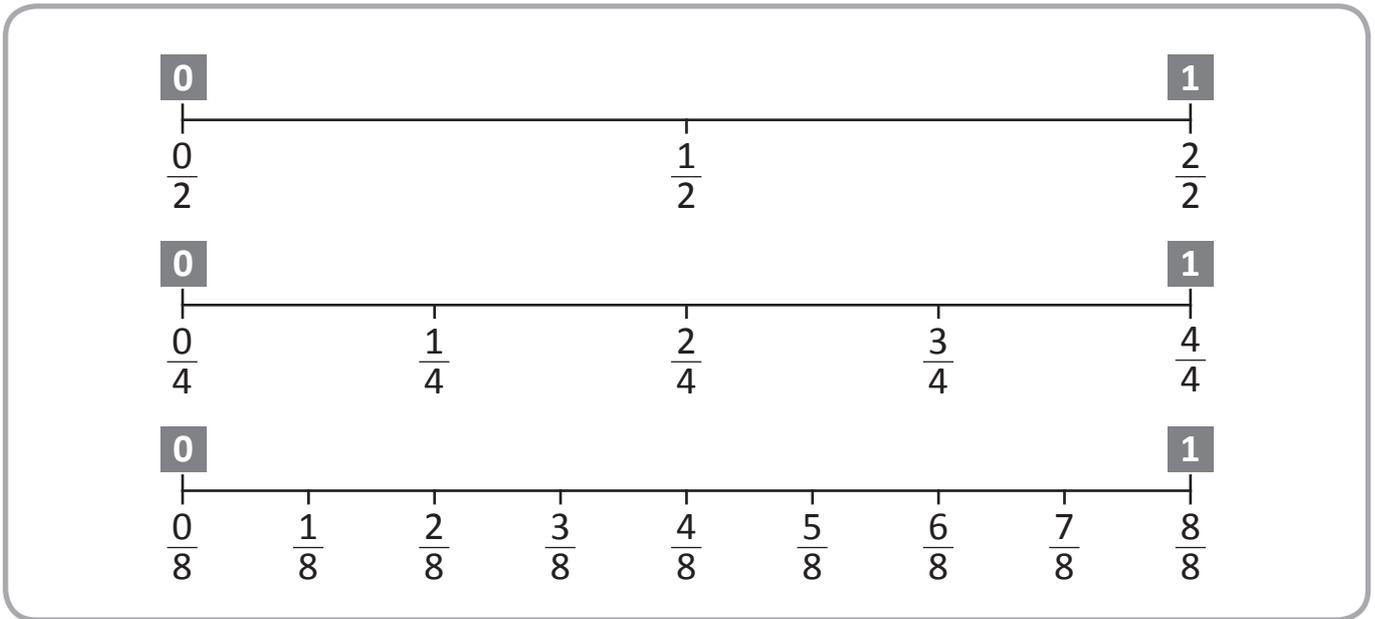


This shape has 8 pieces. To show half, I have shaded 4 pieces.

6 How many different ways can you show a half?



Working with fractions – comparing and ordering fractions

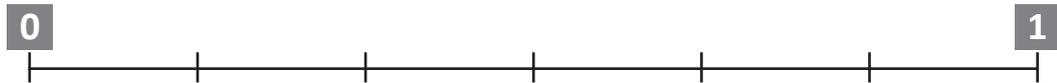


1 Connect the fractions to their places on the number lines.

a

$\frac{1}{3}$

$\frac{1}{6}$



b

$\frac{1}{2}$

$\frac{1}{4}$

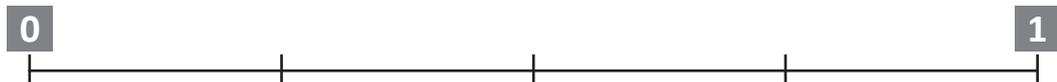
$\frac{5}{8}$



c

$\frac{1}{2}$

$\frac{3}{4}$



d

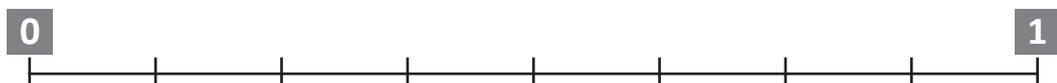
$\frac{3}{8}$

$\frac{5}{8}$

$\frac{1}{4}$

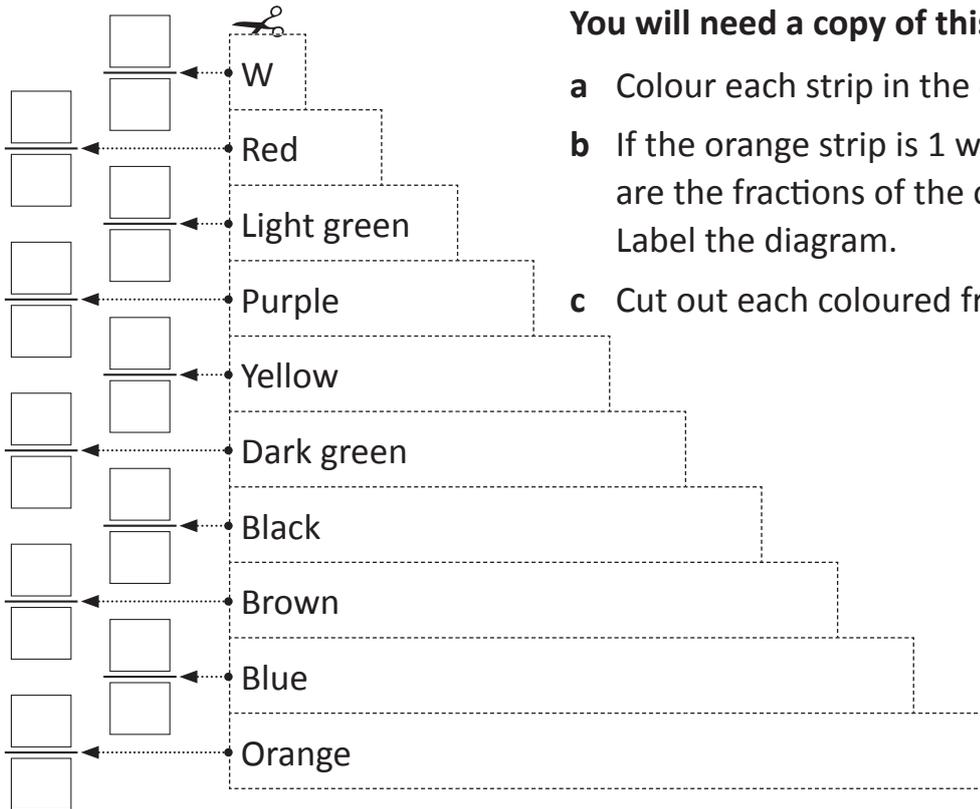
$\frac{1}{2}$

$\frac{3}{4}$



Working with fractions – comparing and ordering fractions

2



You will need a copy of this page.



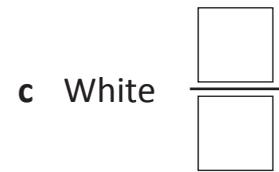
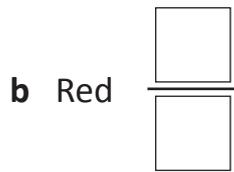
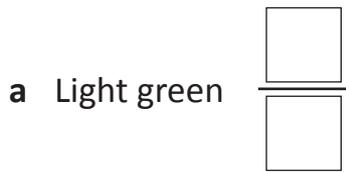
- Colour each strip in the diagram.
- If the orange strip is 1 whole, what are the fractions of the other strips? Label the diagram.
- Cut out each coloured fraction strip.

3 Use the fraction strips that you have cut and coloured to answer these:

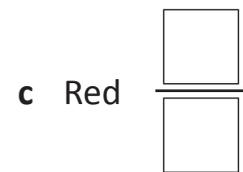
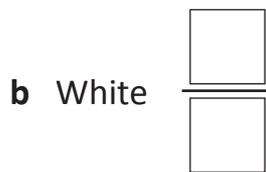
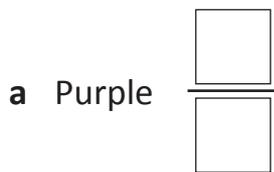
- If purple is $\frac{1}{2}$, which colour is 1 whole? _____
- If red is $\frac{1}{4}$, which colour is 1 whole? _____
- If blue is 1 whole, which colour is $\frac{1}{3}$? _____
- If I connected purple and dark green together and they equalled 1 whole, what is the value of each?
 Purple = _____ Dark green = _____
- If I connected red, light green and purple and they equalled 1 whole, what is the value of each?
 Red = _____ Light green = _____
 Purple = _____

Working with fractions – comparing and ordering fractions

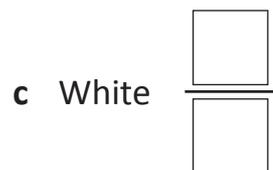
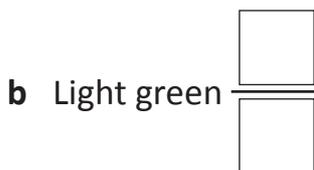
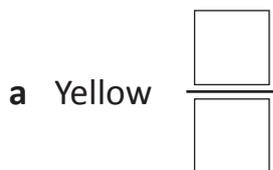
4 If the purple strip is equal to 1 whole, what fractions would these strips now be:



5 If the brown strip is equal to 1 whole, what fractions would these strips now be:



6 If the dark green strip is equal to 1 whole, what fractions would these strips now be:



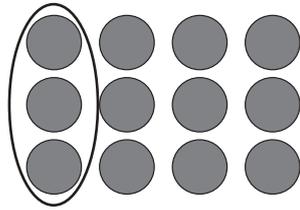
7 This picture shows halves. The red strip is 1 and each white strip is $\frac{1}{2}$.



a Use your strips to create a picture that shows a whole, halves and quarters. First choose a strip that is equal to 1 whole, then choose different colours for the halves and the quarters. Paste your strips in the space below:

Working with fractions – fractions of a collection

Finding a fraction of different amounts is like division. Look at this array of dots. Finding one quarter is the same as dividing 12 by 4.

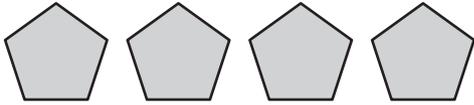


$$12 \div 4 = 3$$

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

1 Circle the fraction given for each group and complete the statements:

a $\frac{1}{2}$ of 4 pentagons



$$\square \div \square = \square$$

$$\frac{1}{2} \text{ of } \square = \square$$

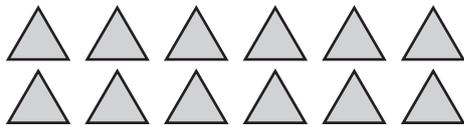
b $\frac{1}{4}$ of 8 stars



$$\square \div \square = \square$$

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

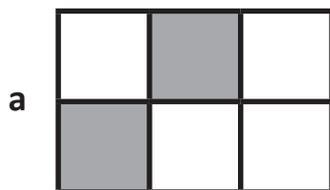
c $\frac{1}{4}$ of 12 triangles



$$\square \div \square = \square$$

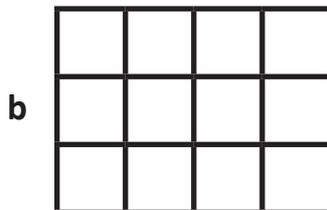
$$\frac{1}{4} \text{ of } \square = \square$$

2 Shade $\frac{1}{3}$ of these grids and complete the statements. The first one has been done for you.



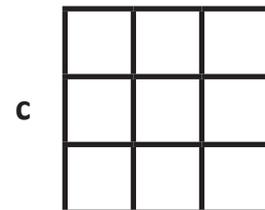
$$\square \div \square = \square$$

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



$$\square \div \square = \square$$

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

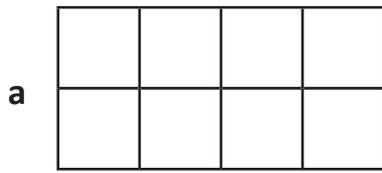


$$\square \div \square = \square$$

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

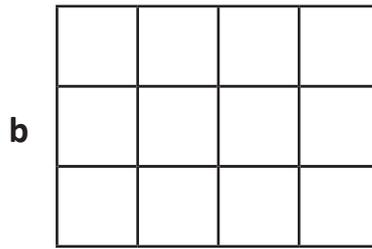
Working with fractions – fractions of a collection

3 Shade $\frac{1}{4}$ on these grids and complete the statements:



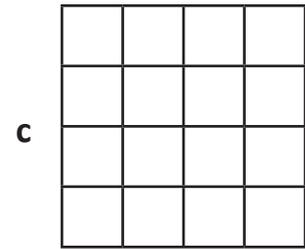
$$\square \div \square = \square$$

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



$$\square \div \square = \square$$

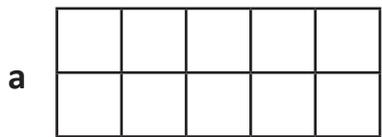
$$\frac{1}{4} \text{ of } \square = \square$$



$$\square \div \square = \square$$

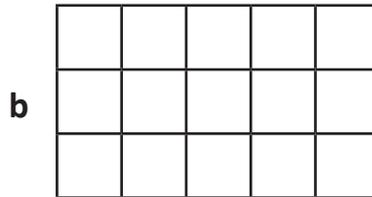
$$\frac{1}{4} \text{ of } \square = \square$$

4 Shade $\frac{1}{5}$ on these grids and complete the statements:



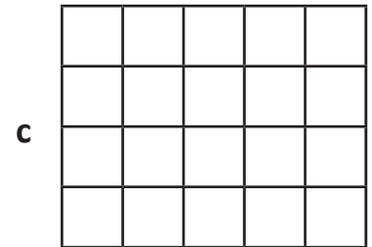
$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$

5 Find the fractions of these numbers:

a $\frac{1}{2}$ of 8 =

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

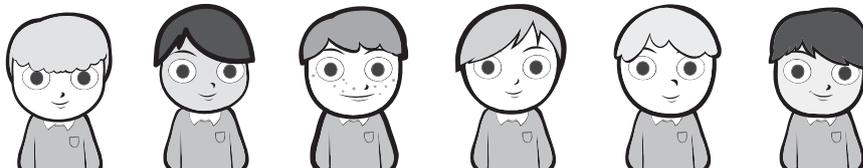
c $\frac{1}{3}$ of 9 =

d $\frac{1}{5}$ of 15 =

e $\frac{1}{8}$ of 16 =

f $\frac{1}{4}$ of 20 =

6 Complete this picture to show that $\frac{2}{3}$ of these boys are wearing hats:



First work out what $\frac{1}{3}$ of 6 is then times by 2.

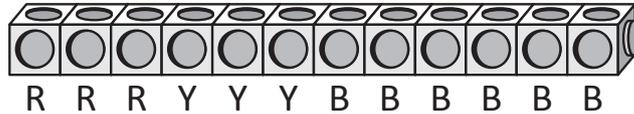


Working with fractions – fractions of a collection

Josie connected 12 cubes. $\frac{1}{4}$ were red, $\frac{1}{4}$ were yellow and the rest were blue. What fraction of the whole were blue?

$$\frac{6}{12} \text{ or } \frac{1}{2}$$

Red: $\frac{1}{4}$ of 12 = 3 Yellow: $\frac{1}{4}$ of 12 = 3 Blue = 6



7 Answer these cube problems:

a Amy connected 8 cubes. $\frac{1}{2}$ were green, $\frac{1}{4}$ were red and the rest were blue.



How many were blue? Green: $\frac{1}{2}$ of 8 = Red: $\frac{1}{4}$ of 8 =

b Joel connected 16 cubes. $\frac{1}{2}$ were blue, $\frac{1}{4}$ were orange and the rest were purple.



How many were purple? Blue: $\frac{1}{2}$ of 16 = Orange: $\frac{1}{4}$ of 16 =

c Natalie connected 20 cubes. $\frac{1}{4}$ were yellow, $\frac{1}{5}$ were green and the rest were orange.



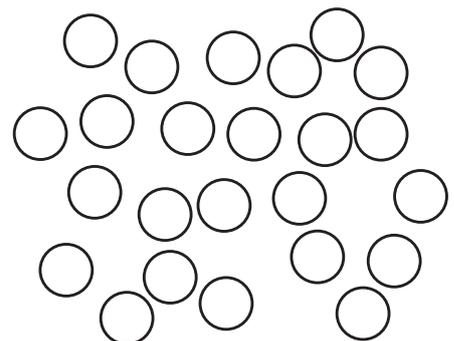
How many were orange? Yellow: $\frac{1}{4}$ of 20 = Green: $\frac{1}{5}$ of 20 =

8 Amber scattered a packet of 24 Smarties on her desk to see how many blue ones there were. Below is a list of what was in the packet. Shade them as shown:

a $\frac{1}{4}$ were red = b $\frac{1}{8}$ were pink =

c $\frac{1}{3}$ were yellow = d $\frac{1}{6}$ were green =

e The rest were blue. How many were blue?

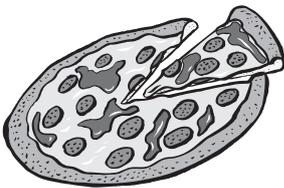


Working with fractions – fraction word problems

- 1 Jess spent half of her pocket money on a magazine. If she gets \$10 pocket money, how much was the magazine?

- 2 If one quarter of a packet of jubes is 8 jubes, how many jubes are there in the whole packet?

- 3 Marley and Matt shared a pizza that had been cut into 8 pieces. Marley ate $\frac{1}{4}$ of the pizza and Matt ate $\frac{1}{2}$. How many pieces were left?



- 4 Amy made 24 cupcakes. She iced $\frac{1}{8}$ of them pink, $\frac{1}{4}$ of them blue and left the rest plain. How many plain cupcakes were there?



- 5 Josie ordered two pizzas cut into eighths. If he ate $\frac{5}{8}$ of a pizza, how much was left?



This is a game for either 3 or 5 players. Each player will need to cut out a copy of the cards on page 11.

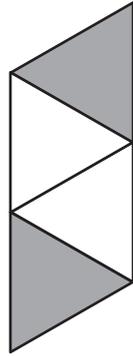


Choose one person to be the dealer. Each player cuts out the cards and gives them to the dealer. The object of this game is to collect as many pairs of cards showing the same fraction as possible.

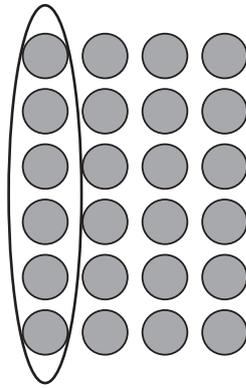
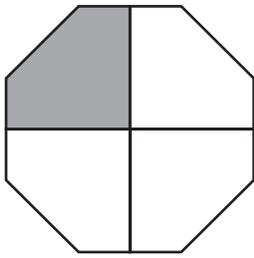
The dealer shuffles the cards well and deals 6 cards to each player. The remaining cards are placed face down in 'the pond' in the middle with players sitting around the pond in a circle.

- 1 The player on the dealer's right begins by asking any player for a specific card. For example: "Amity do you have a card that shows $\frac{1}{4}$?"
- 2 If Amity has a $\frac{1}{4}$ card she must hand over that card and the same player asks anyone in the group for another card.
- 3 If a player does not have the card that was asked for they must say, "Go fish." Then the person asking must take a card from 'the pond' and it is the next person's turn.
- 4 Play continues until there are no more cards left in the pond. The player with the most sets is the winner.

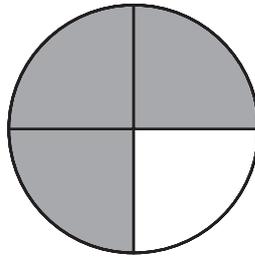
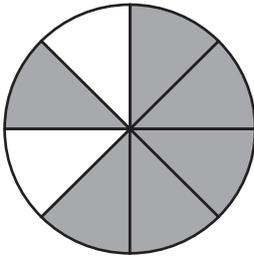




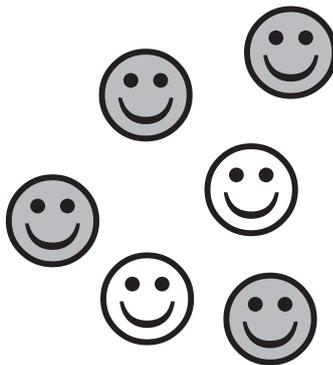
$$\frac{1}{2}$$



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



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



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