SIMMERING BRONZE

Flashback 4

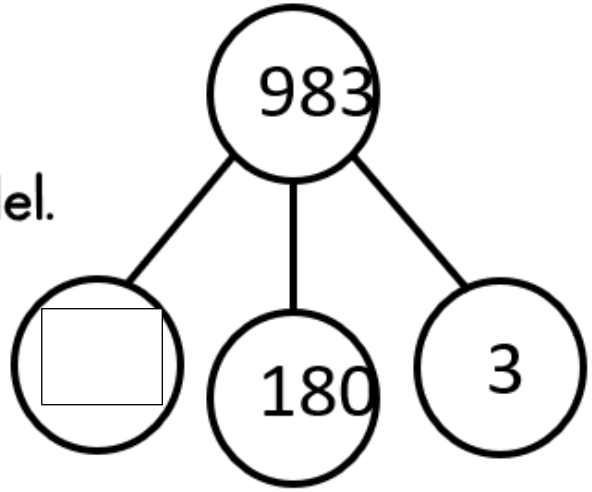
What shape is this?

1) 1,000 g = ☐ kg

2) How many faces does a cuboid have?

3) Which is longest 30 cm, 30 mm or 3 m?

4) Complete the part-whole model.



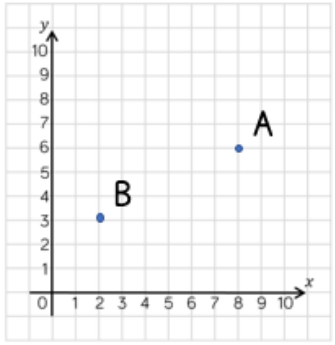
White Rose Maths

SIMMERING SILVER

Flashback 4

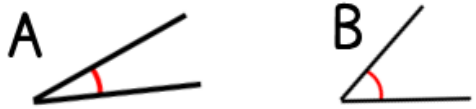
How many vertices has this shape got?

1) Describe the translation from point A to point B.



2) Which type of triangle has 1 line of symmetry?

3) Which angle is larger, A or B?



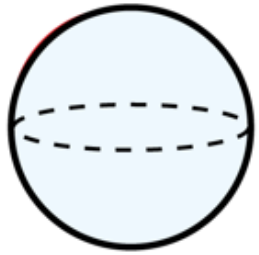
4) Calculate 300 + 1,900 + 2,700

White Rose Maths

SIMMERING GOLD

Flashback 4

If you cut this shape in half, what shape would it make?

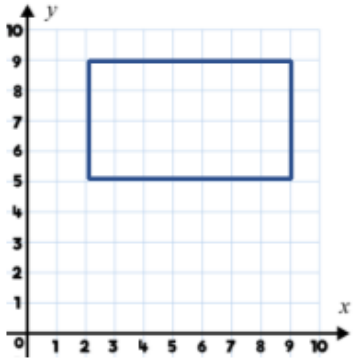


1) Estimate the capacity of a mug.

A. 30 ml B. 300 ml C. 900 ml

2) 7 week and 3 days = ☐ days

3) What are the coordinates of the vertices of the rectangle?

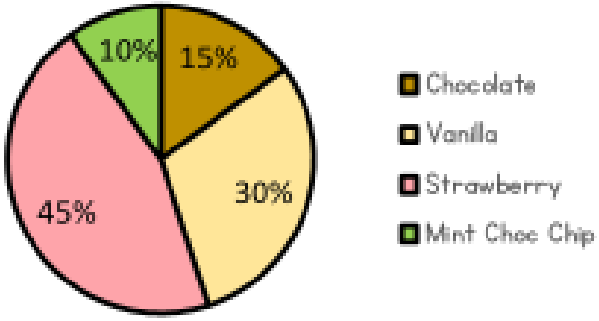


4) Write 17% as a decimal and a fraction.

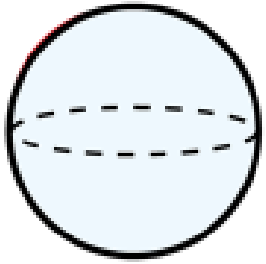
White Rose Maths

SIMMERING PLATINUM

Flashback 4

1) 

In a survey of 120 people, how many preferred Strawberry ice cream?



2) Always, Sometimes, Never true?

When drawing a line graph, each axis should start with zero.

3) Find the sum of the internal angles of a regular hexagon.

4) Find the length.

White Rose Maths

ANSWERS SIMMERING BRONZE

Flashback 4

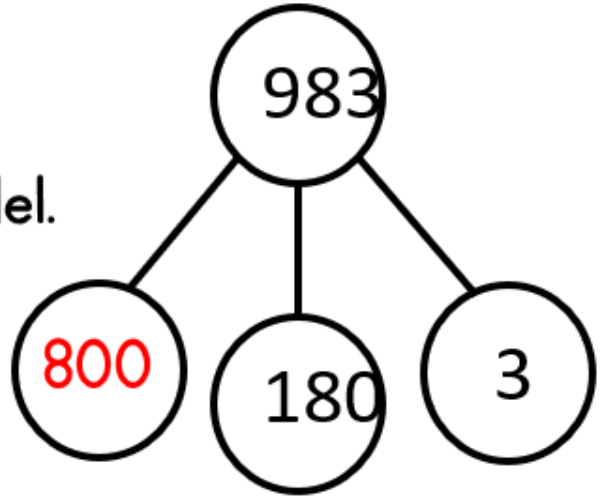
sphere

1) 1,000 g = 1 kg

2) How many faces does a cuboid have? 6

3) Which is longest 30 cm, 30 mm or 3 m? 3 m

4) Complete the part-whole model.



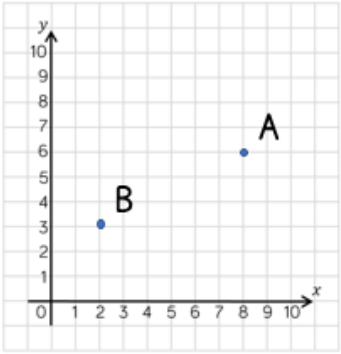
White Rose Maths

ANSWERS SIMMERING SILVER

Flashback 4

A sphere does not have any vertices

1) Describe the translation from point A to point B.

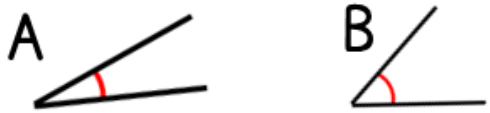


6 left, 3 down

2) Which type of triangle has 1 line of symmetry?

isosceles triangle

3) Which angle is larger, A or B?



B

4) Calculate 300 + 1,900 + 2,700

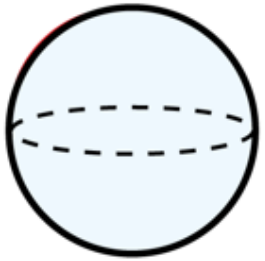
4,900

White Rose Maths

ANSWERS SIMMERING GOLD

Flashback 4

hemisphere

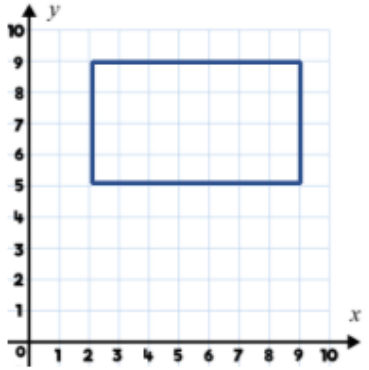


1) Estimate the capacity of a mug.

A. 30 ml B. 300 ml C. 900 ml B. 300 ml

2) 7 week and 3 days = 52 days

3) What are the coordinates of the vertices of the rectangle?



(2,5) (2,9)
(9,5) (9,9)

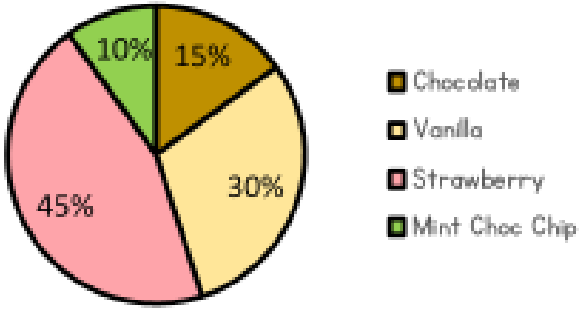
4) Write 17% as a decimal and a fraction.

0.17 $\frac{17}{100}$

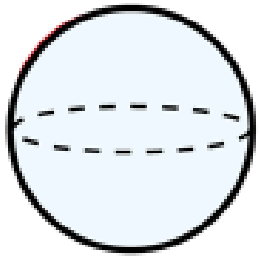
White Rose Maths

ANSWERS SIMMERING PLATINUM

Flashback 4

1) 

In a survey of 120 people, how many preferred Strawberry ice cream? 54



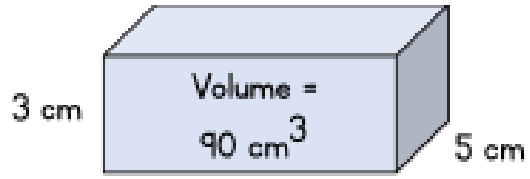
2) Always, Sometimes, Never true?

When drawing a line graph, each axis should start with zero.

Sometimes

3) Find the sum of the internal angles of a regular hexagon. 720°

4) Find the length.



6 cm

White Rose Maths

BRONZE

Horizontal and vertical

1 Which line is horizontal?

2 Which line is vertical?

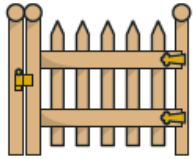
3 Use a ruler to draw the lines.

a) Draw a horizontal line 5 cm long.

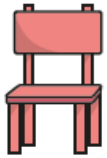
b) Draw a line that is not horizontal or vertical.

c) Draw a vertical line 5 cm long.

4 Find two horizontal lines on the gate.



5 Find three vertical lines on the chair.



6 Here are some flags.

a) Which flags have horizontal stripes?




b) Which flags have vertical stripes?




c) Is the statement true or false?

This flag has vertical and horizontal stripes.

Horizontal and vertical

6 Here are some flags.

a) Which flags have horizontal stripes?




b) Which flags have vertical stripes?

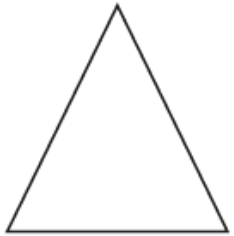
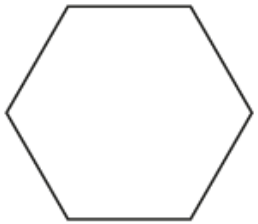


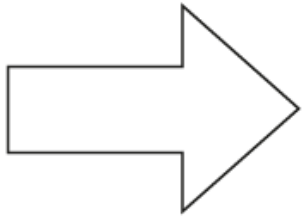

c) Is the statement true or false?

This flag has vertical and horizontal stripes.

7 Draw the shapes that have a vertical line of symmetry.

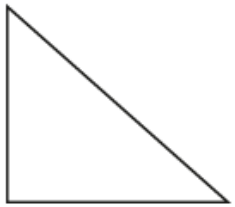
Mark the line of symmetry on the shapes.

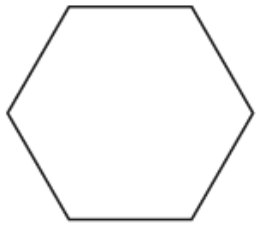
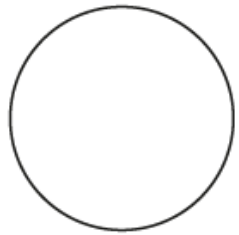





8 Draw the shapes that have a horizontal line of symmetry.

Mark the line of symmetry on the shapes.



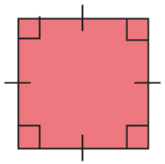



SILVER

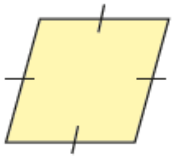
Quadrilaterals

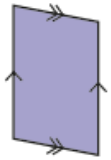
1 Use the word bank to label each quadrilateral.

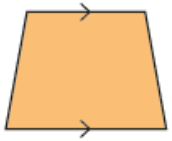
rhombus | parallelogram | trapezium | rectangle | square

a) 

b) 

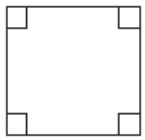
c) 

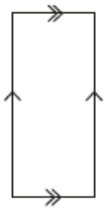
d) 

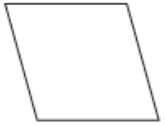
e) 

How did you know which shape was which?

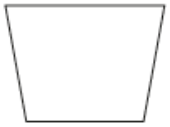
2 Here are some quadrilaterals.

A 

B 

C 

D 

E 

a) Mark any right angles on the shapes.
One shape has been done for you.

b) Mark any pairs of parallel lines.
One shape has been done for you.

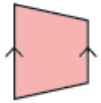
c) Which shapes do not have any right angles?

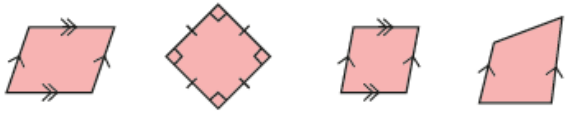
d) Which shapes have two pairs of parallel lines?

e) Which shapes have four equal sides?

Compare answers with a partner.

3 Complete the table for all the shapes.
The first one has been done for you.

Shape	Polygon?	Number of sides	Number of right angles	Number of pairs of parallel sides	Number of equal sides
	Yes	4	4	2	2 pairs
					2



What is the same about all of the shapes? What is different?

a) Mark any right angles on the shapes.
One shape has been done for you.

b) Mark any pairs of parallel lines.
One shape has been done for you.

c) Which shapes do not have any right angles?

d) Which shapes have two pairs of parallel lines?

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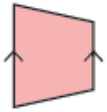
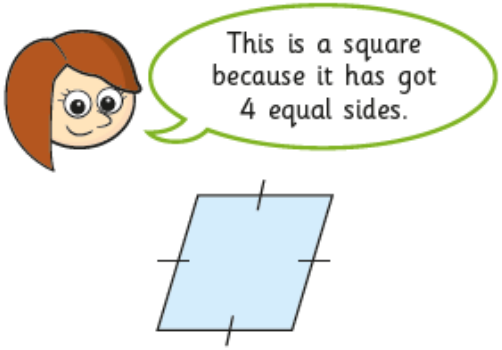
					2

What is the same about all of the shapes? What is different?

4 Draw the shapes on a squared grid.

a) square **b)** trapezium **c)** parallelogram

5



Do you agree with Rosie?

Explain your answer.

6 Complete this Frayer Model to describe a quadrilateral.

My definition	Key characteristics
Quadrilateral	
Example	Non-example

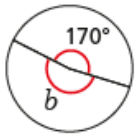
GOLD

Calculating angles around a point

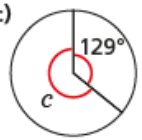
1 Work out the sizes of the unknown angles.

a)

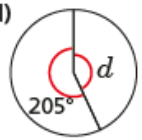
b)



c)



d)

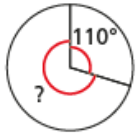


2 Ron turns clockwise through 110 degrees.

He continues to turn the same way.

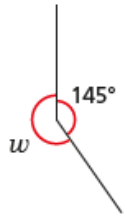
He wants to turn to where he was facing at the start.

How many more degrees does he need to turn through?

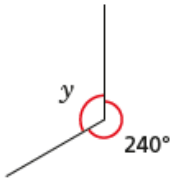


3 Work out the size of the unknown angles.

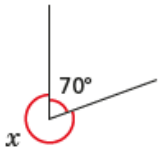
a)



c)



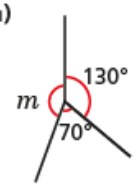
b)



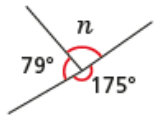
d)

4 Work out the sizes of the unknown angles.

a)



b)



5 Ms Hall asks her class to draw an angle of 250 degrees.

My protractor only goes up to 180 degrees.

Amir

That's true. But I think we can still use it.

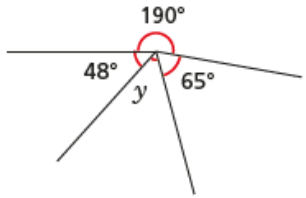
Alex

a) Explain why Alex is correct.

b) Draw an angle of 250 degrees.

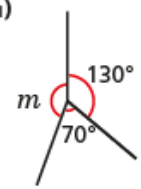
Compare methods with a partner.

6 Work out the size of angle y.



4 Work out the sizes of the unknown angles.

a)



b)

5 Ms Hall asks her class to draw an angle of 250 degrees.

Amir

My protractor only goes up to 180 degrees.

That's true. But I think we can still use it.

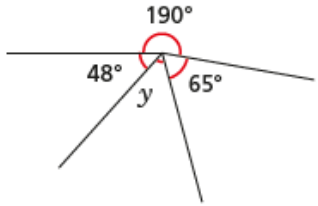
Alex

a) Explain why Alex is correct.

b) Draw an angle of 250 degrees.

Compare methods with a partner.

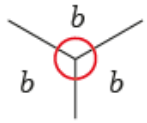
6 Work out the size of angle y.



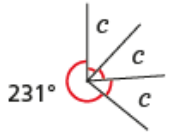
7 Work out the sizes of the unknown angles.

Give reasons to support your answers.

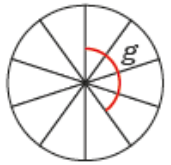
a)



b)



8 A circle is divided into ten equal sections.

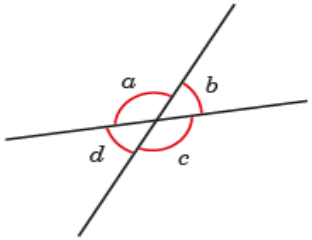


What is the size of the angle marked g?

Platinum

Vertically opposite angles

1 The diagram shows four angles formed by two straight lines.



a) Measure the sizes of the angles.

$a =$ ☐ $b =$ ☐ $c =$ ☐ $d =$ ☐

b) What is the total of angles a and b? ☐

Explain why.

_____

Do any other pairs of angles have this same total?

c) Angles a and c are vertically opposite angles.

What do you notice about the sizes of angles a and c?

_____

d) Angles b and d are also vertically opposite angles.

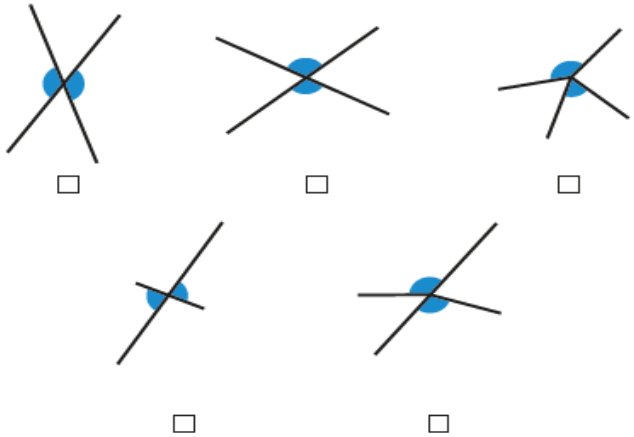
What do you notice about the sizes of angles b and d?

_____

e) Complete the sentence.

Vertically opposite angles _____

2 Tick the pairs of angles that are vertically opposite.



☐ ☐ ☐ ☐ ☐

Compare answers with a partner.

3 Work out the sizes of the unknown angles.

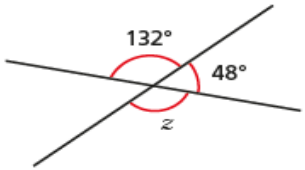
Give reasons for your answers.

a)

$y =$ ☐ because _____

_____

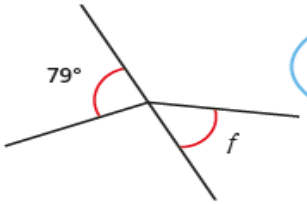
b)

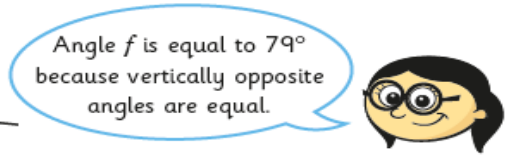


$z =$ ☐ because _____

_____

4 Annie is working out the size of angle f.





Do you agree with Annie? _____

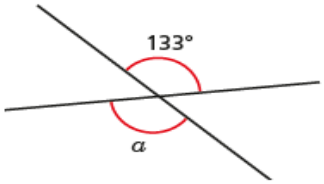
Explain your answer.

_____

_____

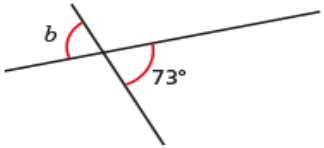
5 Work out the unknown angles.

a)



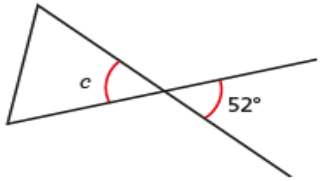
$a =$ ☐

b)



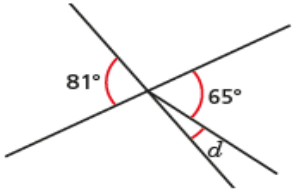
$b =$ ☐

c)



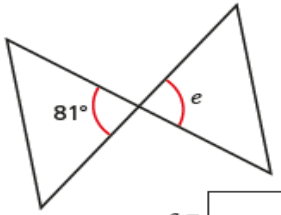
$c =$ ☐

d)



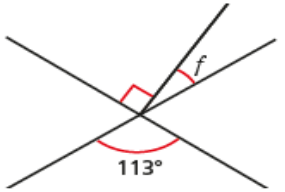
$d =$ ☐

e)



$e =$ ☐

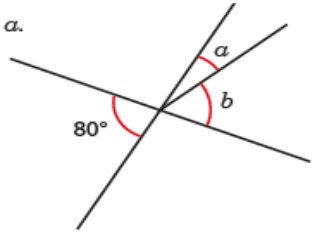
f)



$f =$ ☐

Talk about your reasons with a partner.

6 Angle b is three times the size of angle a.

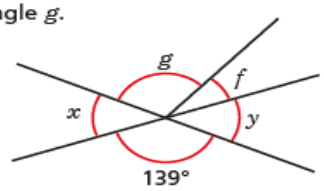


Work out the sizes of angles a and b.

$a =$ ☐ $b =$ ☐

7 Angle f is one quarter of the size of angle g.

Angle f is 28°.



Are angles x and y vertically opposite? _____

Explain your answer.

_____

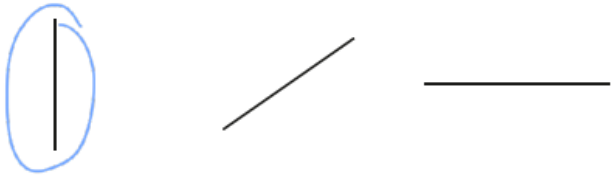
_____

BRONZE ANSWERS

Horizontal and vertical

1 Circle the line that is horizontal.

2 Circle the line that is vertical.



3 Use a ruler to draw the lines.

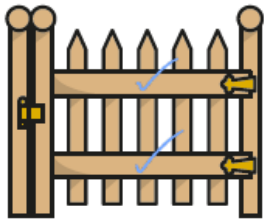
a) Draw a horizontal line 5 cm long.

b) Draw a line that is not horizontal or vertical.

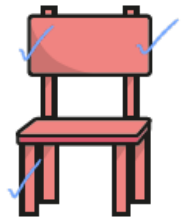
e.g.

c) Draw a vertical line 5 cm long.

4 Tick two horizontal lines on the gate.

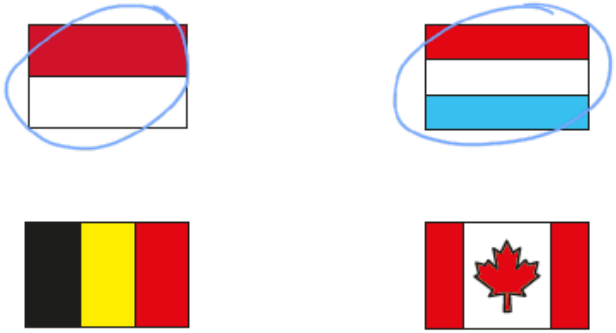


5 Tick three vertical lines on the chair.

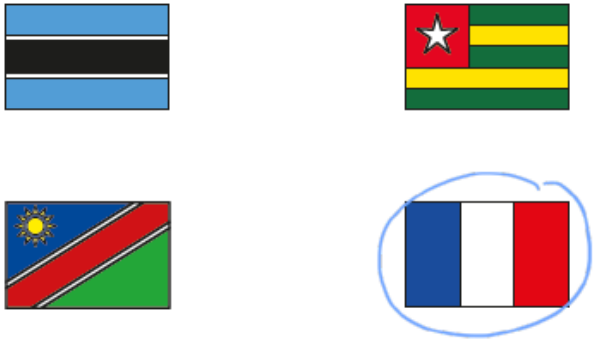


6 Here are some flags.

a) Circle the flags that have horizontal stripes.



b) Circle the flags that have vertical stripes.



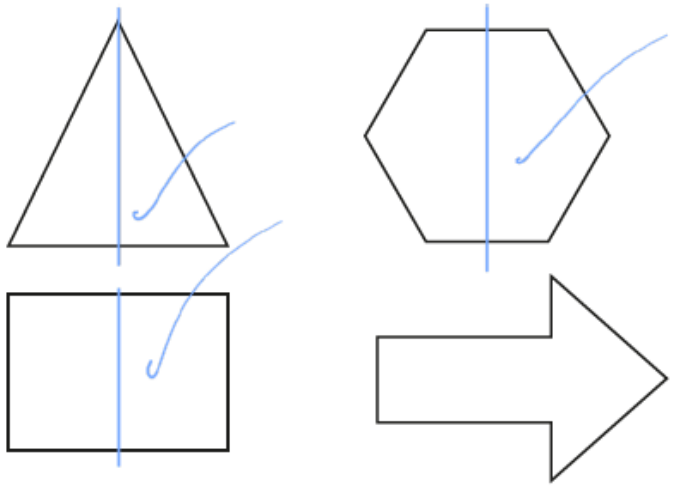
c) Is the statement true or false?

This flag has vertical and horizontal stripes.

false

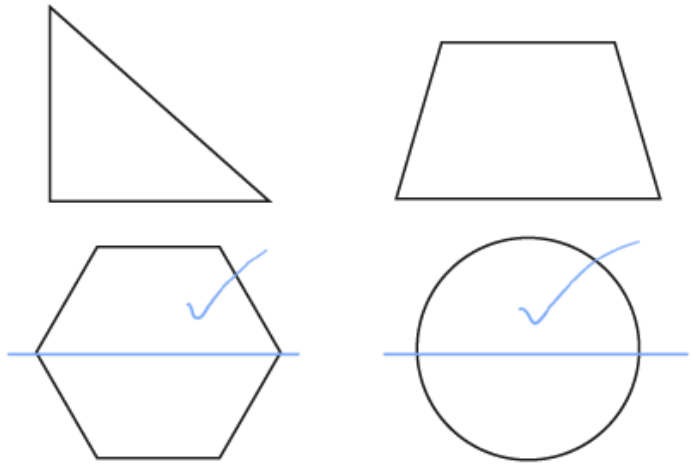
7 Tick the shapes that have a vertical line of symmetry.

Draw on the shapes to show the line of symmetry.



8 Tick the shapes that have a horizontal line of symmetry.

Draw on the shapes to show the line of symmetry.



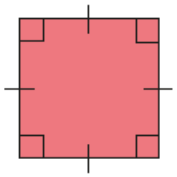
SILVER ANSWERS

Quadrilaterals

1 Use the word bank to label each quadrilateral.

rhombus | parallelogram | trapezium | rectangle | square

a)

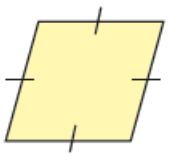


square

b)

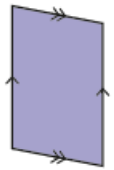
rectangle

c)



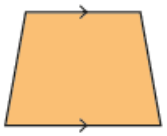
rhombus

d)



parallelogram

e)

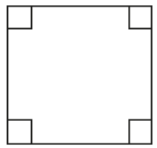


trapezium

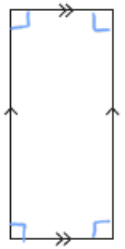
How did you know which shape was which?

2 Here are some quadrilaterals.

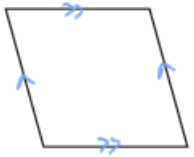
A



B

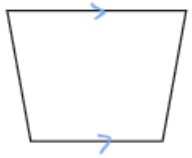


C



D

E



a) Mark any right angles on the shapes.
One shape has been done for you.

b) Mark any pairs of parallel lines.
One shape has been done for you.

c) Which shapes do not have any right angles?

C D E

d) Which shapes have two pairs of parallel lines?

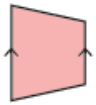
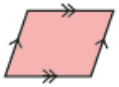
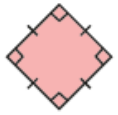
B C D

e) Which shapes have four equal sides?

A C

Compare answers with a partner.

3 Complete the table.

Shape	Polygon?	Number of sides	Number of right angles	Number of pairs of parallel sides	Number of equal sides
	Yes	4	4	2	2 pairs
	Yes	4	0	1	2
	Yes	4	0	2	2 pairs
	Yes	4	4	2	4
	Yes	4	0	2	4
	Yes	4	0	1	0

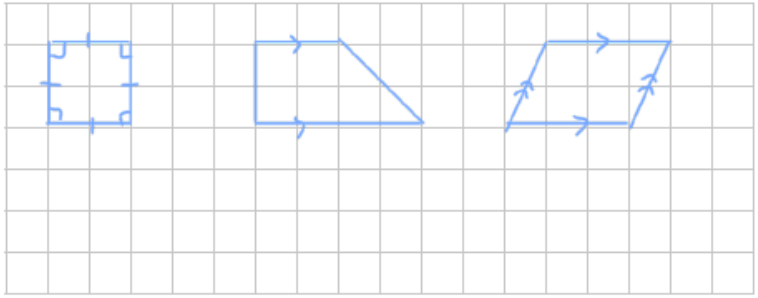
What is the same about all of the shapes?

What is different?

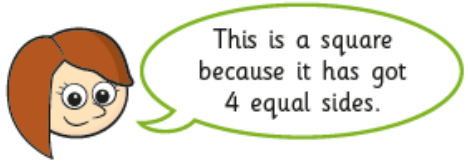
4 Draw the shapes on the grid.

a) square **b)** trapezium **c)** parallelogram

e.g.



5



Do you agree with Rosie? No

Explain your answer.

6 Complete this Frayer Model to describe a quadrilateral.

e.g.

My definition	Key characteristics
A closed shape with four straight sides.	closed shape 4 straight sides 4 vertices
Quadrilateral	
Example	**Non-example**
	

GOLD ANSWERS

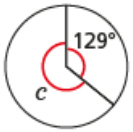
Calculating angles around a point

1 Work out the sizes of the unknown angles.

a)

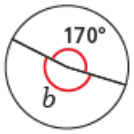
$a =$ 300 °

c)



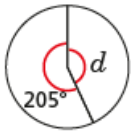
$c =$ 231 °

b)



$b =$ 190 °

d)



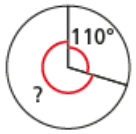
$d =$ 155 °

2 Ron turns clockwise through 110 degrees.

He continues to turn the same way.

He wants to turn to where he was facing at the start.

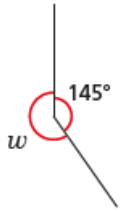
How many more degrees does he need to turn through?



250 °

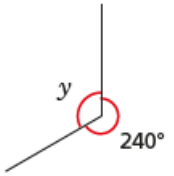
3 Work out the size of the unknown angles.

a)



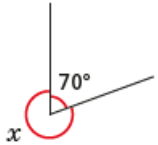
$w =$ 215 °

c)



$y =$ 120 °

b)



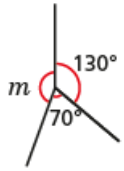
$x =$ 290 °

d)

$z =$ 95 °

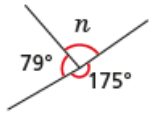
4 Work out the sizes of the unknown angles.

a)



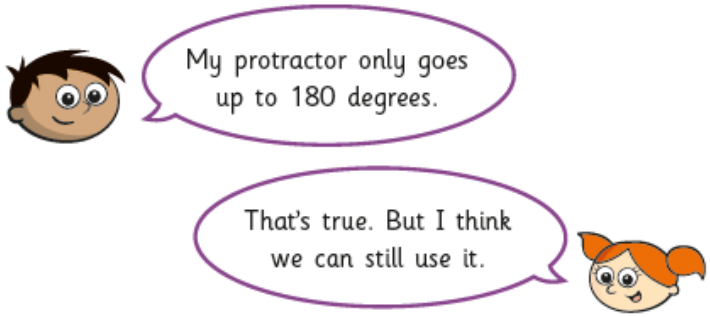
$m =$ 160 °

b)



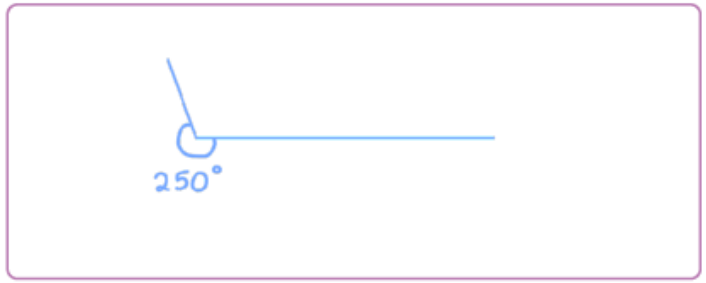
$n =$ 106 °

5 Ms Hall asks her class to draw an angle of 250 degrees.



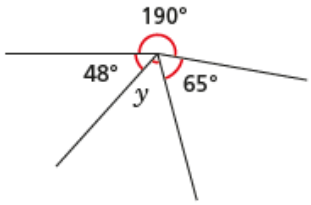
a) Explain why Alex is correct.

b) Draw an angle of 250 degrees.



Compare methods with a partner.

6 Work out the size of angle y.

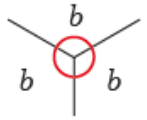


$y =$ 57 °

7 Work out the sizes of the unknown angles.

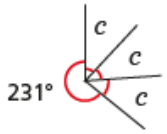
Give reasons to support your answers.

a)



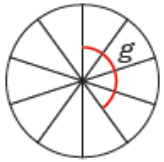
$b =$ 120° because angles around a point sum to 360° and 360÷3=120

b)



$c =$ 43 ° because angles round a point sum to 360° 360−231=129 and 129÷3=43

8 A circle is divided into ten equal sections.



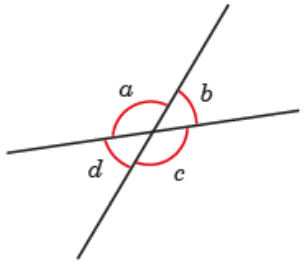
What is the size of the angle marked g? $g =$ 144 °

PLATINUM ANSWERS

Vertically opposite angles

White Rose Maths

1 The diagram shows four angles formed by two straight lines.



a) Measure the sizes of the angles.

$a =$ 130° $b =$ 50° $c =$ 130° $d =$ 50°

b) What is the total of angles a and b? 180°

Explain why.

Adjacent angles on a straight line sum to 180°

Do any other pairs of angles have this same total?

c) Angles a and c are vertically opposite angles.

What do you notice about the sizes of angles a and c?

They are equal.

d) Angles b and d are also vertically opposite angles.

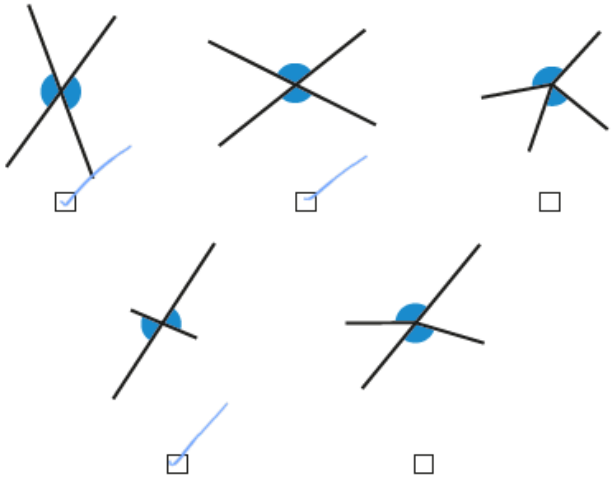
What do you notice about the sizes of angles b and d?

They are equal.

e) Complete the sentence.

Vertically opposite angles are equal.

2 Tick the pairs of angles that are vertically opposite.



Compare answers with a partner.

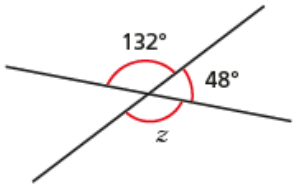
3 Work out the sizes of the unknown angles.

Give reasons for your answers.

a)

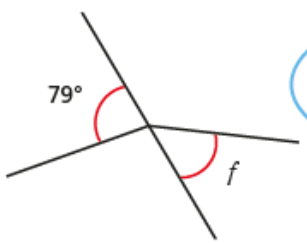
$y =$ 29° because vertically opposite angles are equal.

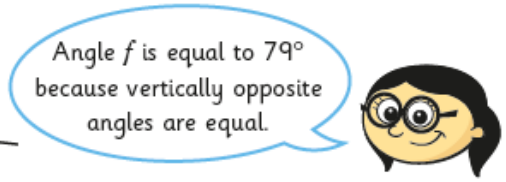
b)



$z =$ 132° because vertically opposite angles are equal.

4 Annie is working out the size of angle f.





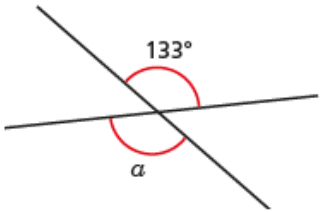
Do you agree with Annie? No

Explain your answer.

The diagram doesn't show two straight lines crossing so the angles are not vertically opposite.

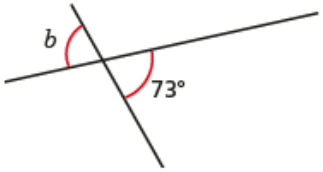
5 Work out the unknown angles.

a)



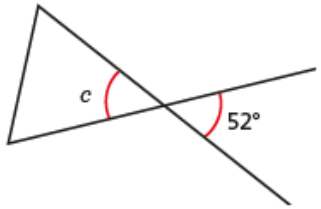
$a =$ 133°

b)



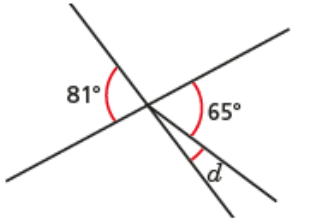
$b =$ 73°

c)



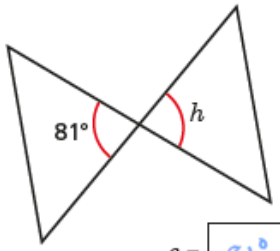
$c =$ 52°

d)



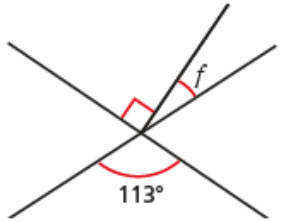
$d =$ 16°

e)



$e =$ 81°

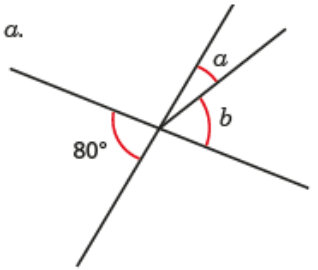
f)



$f =$ 23°

Talk about your reasons with a partner.

6 Angle b is three times the size of angle a.

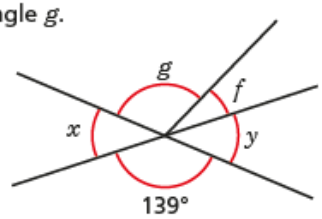


Work out the sizes of angles a and b.

$a =$ 20° $b =$ 60°

7 Angle f is one quarter of the size of angle g.

Angle f is 28°.



Are angles x and y vertically opposite? No

Explain your answer.

28×4 = 112 so $g = 112°$

112 + 28 = 140

139 ≠ 140 therefore the diagram does not show vertically opposite angles.