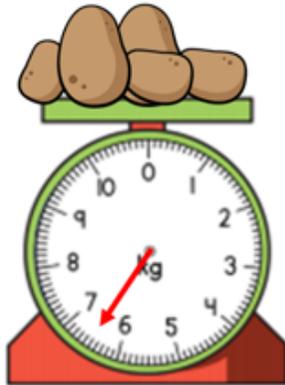


SIMMERING BRONZE

What shape is this?

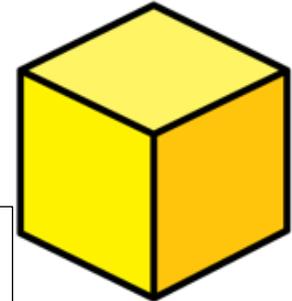
Flashback 4

Year 3 | Week 9 | Day 4



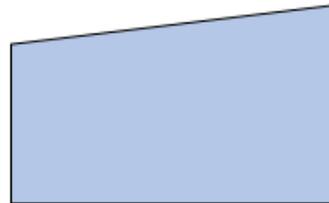
1)

The potatoes weigh kg and g



2)

How many pairs of perpendicular lines are in the shape?



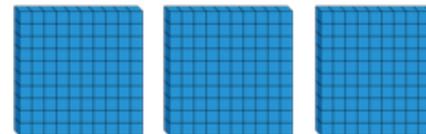
3)

How many acute angles are in the shape above?



4)

Which number is represented?

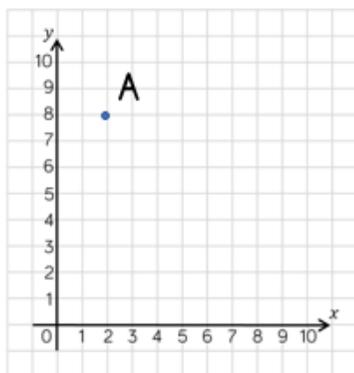


Flashback 4

What shape is this?



- 1) Translate point A 4 to the right and 3 down.
Write the coordinates of the new point.



- 2) How many lines of symmetry does a rhombus have?

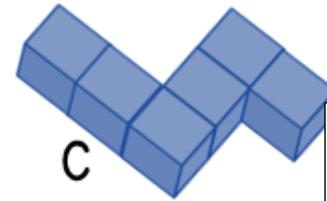
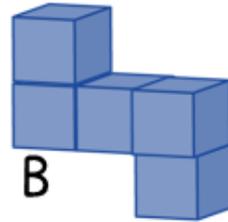
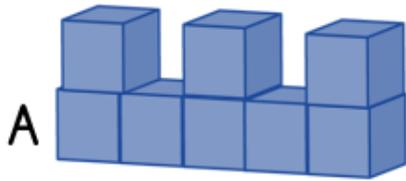
- 3) An angle measures 90° . What type of angle is it?

- 4) Subtract 3,462 from 5,200

Flashback 4

What shape is this?

1) Put the shapes in ascending order of volume.



2) $\frac{1}{4}$ of an hour is equal to minutes.

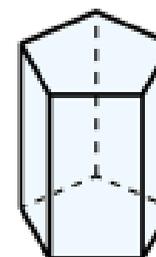
3) How many km are the same as 3,217 m?

4) What number comes next in the sequence?

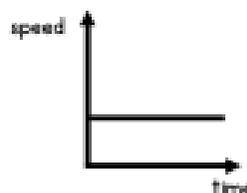
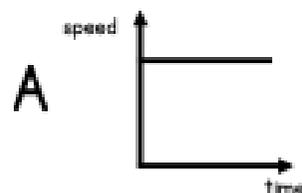
879, 889, 899,

Flashback 4

- 1) A pie chart represents 12 people.
How many people does an angle of 60° represent?

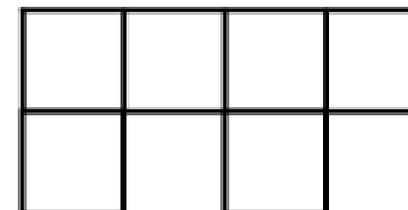


- 2) Which graph shows the faster constant speed?



B

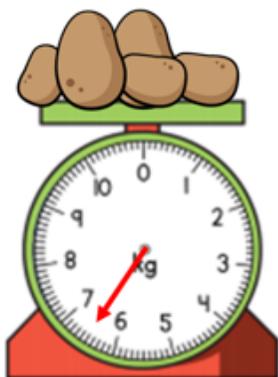
- 3) Will this 3-D net make a closed cube?



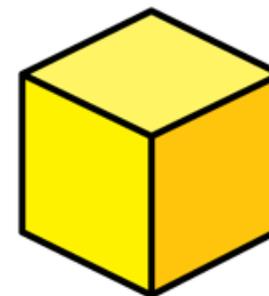
- 4) There are 12 blue counters and 18 red counters.
Find the ratio of blue to red?

Flashback 4

cube

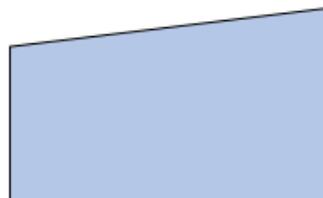


1)

The potatoes weigh 6 kg and 500g

2)

How many pairs of perpendicular lines are in the shape?



2

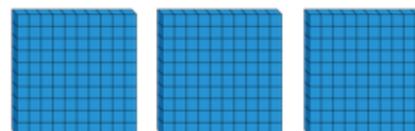
3)

How many acute angles are in the shape above?

1

4)

Which number is represented?

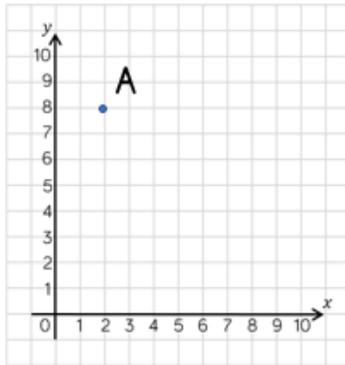


304

Flashback 4

cone

- 1) Translate point A 4 to the right and 3 down.
Write the coordinates of the new point.



(6, 5)

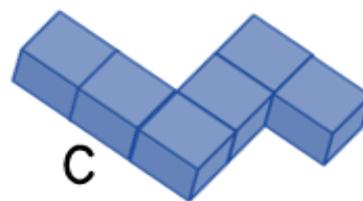
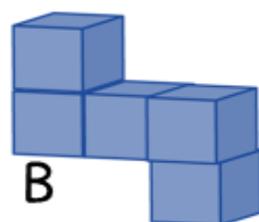
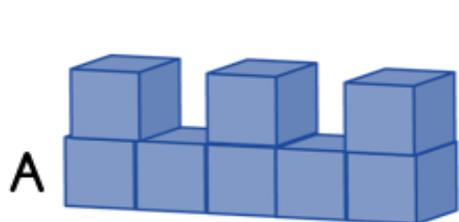


- 2) How many lines of symmetry does a rhombus have? 2
- 3) An angle measures 90° . What type of angle is it?
right angle
- 4) Subtract 3,462 from 5,200 1,738

Flashback 4

kite

- 1) Put the shapes in ascending order of volume.



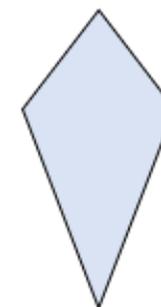
B, C, A

- 2) $\frac{1}{4}$ of an hour is equal to minutes.

- 3) How many km are the same as 3,217 m?

3.217 km

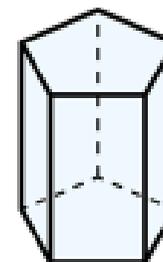
- 4) What number comes next in the sequence?

879, 889, 899, 909

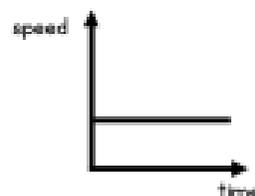
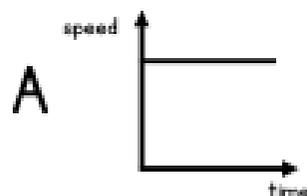
Flashback 4

Year 6 | Week 7 | Day 5

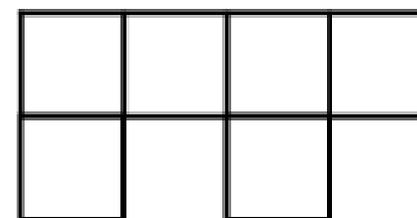
- 1) A pie chart represents 12 people. 2
How many people does an angle of 60° represent?



- 2) Which graph shows the faster constant speed?

A

- 3) Will this 3-D net make a closed cube? No



- 4) There are 12 blue counters and 18 red counters.
Find the ratio of blue to red? 2 : 3

Compare angles

1 Here are some angles.

a) Which angle is greater than a right angle?



b) Which angle is less than 90 degrees?



2 Draw three different angles that are less than a right angle.

Compare answers with a partner.

Complete the sentence.

These are all examples of _____ angles.

3 Draw two different obtuse angles.

Compare answers with a partner.

Complete the sentence.

Obtuse angles are greater than degrees

but less than degrees.

4 Is the angle between the hands of the clock acute or obtuse?

a)



b)

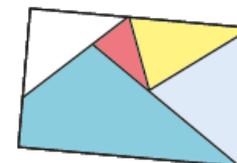


5 Here is a piece of wallpaper.

a) Find two right angles on the wallpaper.

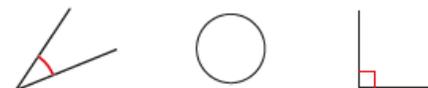
b) Find four acute angles on the wallpaper.

c) Find two obtuse angles on the wallpaper

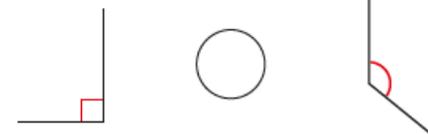


6 Write $<$, $>$ or $=$ to compare the sizes of the angles.

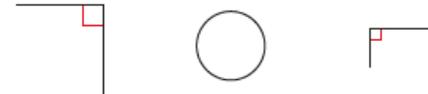
a)



b)



c)

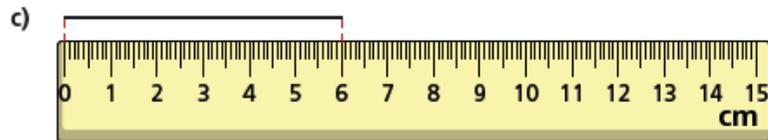
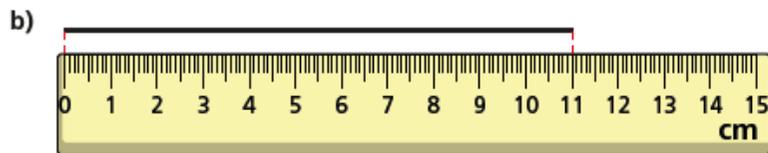
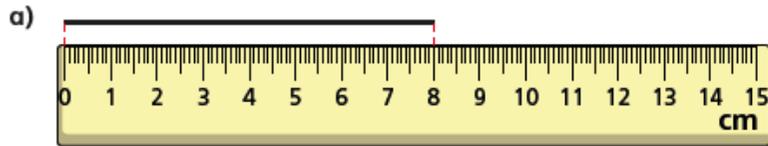


7 Draw a shape that has one right angle, two acute angles and one obtuse angle.

Compare answers with a partner.

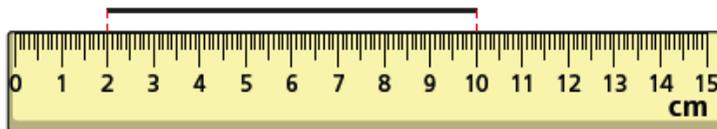
What is the same and what is different about your shapes?

1 How long is each line?



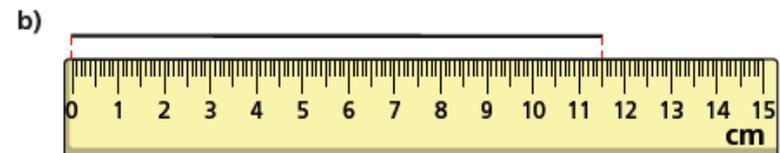
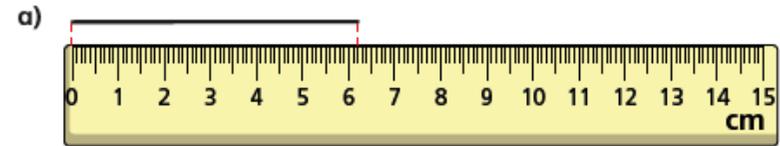
2 Draw two lines that are each 5 cm long.

3 Dani says the line is 10 cm long.



- a) What mistake has Dani made?
- b) How long is the line?

4 What is the length of each line in millimetres?



c) _____

5 Use a ruler to draw the lines.

- a) Draw a line 8 cm long.
- b) Draw a line 80 mm long.

What do you notice about the lines you have drawn? Why is this?

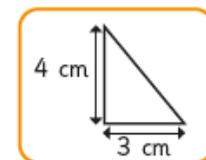
6 Use a ruler to help you answer the questions.

- a) Draw a 4 cm by 4 cm square.
- b) Measure the length of the diagonal.

Give your answer in millimetres.

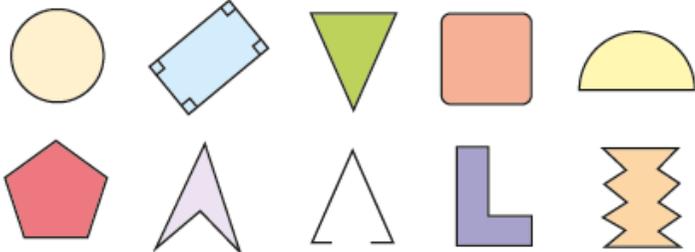
7 Draw a rectangle 8 cm long and 32 mm wide.

- a) Make a sketch of the triangle.
- b) Use your drawing to work out the perimeter of the triangle.



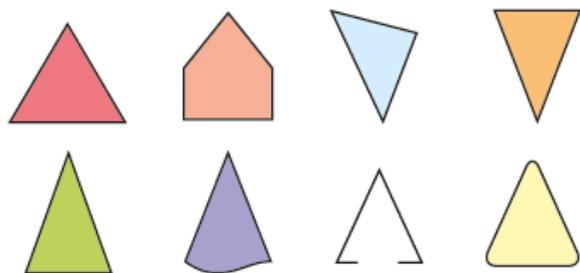
Triangles

1 Here are some shapes.



- Which shapes are polygons?
- Talk to a partner about why the other shapes are not polygons.
- Write a definition of a polygon.
Compare your definition with a partner's.

2 Which shapes are triangles?

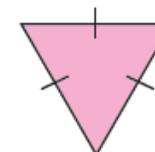


For any shapes that are not triangles, talk to a partner about why somebody might think they are triangles.

3 Ron is classifying triangles.



This is an upside down triangle.

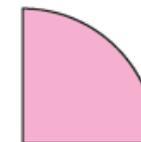


- Ron is incorrect.
Explain why.
- What type of triangle is it?

4 Annie is identifying shapes.



This shape has 3 sides, so it is a triangle.



- Do you agree with Annie?
Explain your answer.

5 Match the type of triangle to the definition.

scalene

equilateral

isosceles

2 sides and
2 angles equal

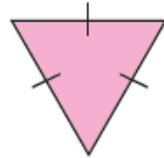
no sides or
angles equal

all sides and
all angles equal

3 Ron is classifying triangles.



This is an upside down triangle.

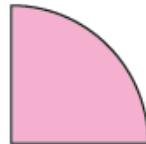


- a) Ron is incorrect.
Explain why.
- b) What type of triangle is it?

4 Annie is identifying shapes.



This shape has 3 sides, so it is a triangle.



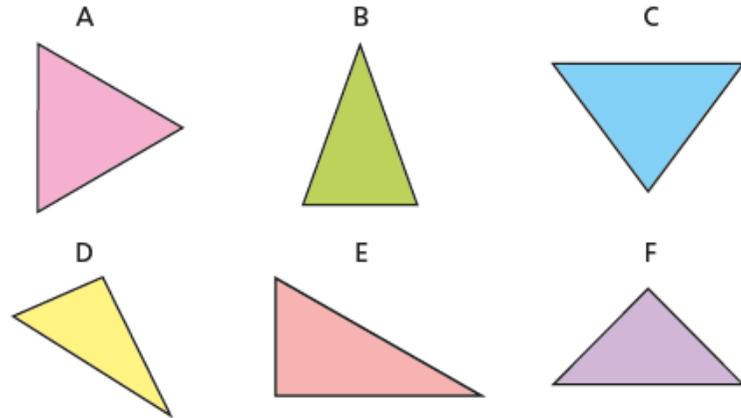
- Do you agree with Annie?
- Explain your answer.

5 Match the type of triangle to the definition.

scalene	equilateral	isosceles
2 sides and 2 angles equal	no sides or angles equal	all sides and all angles equal

6 Label each triangle as either equilateral, isosceles or scalene.

You will need to measure the side lengths.



7 Draw each triangle on a squared grid.

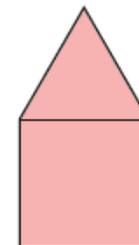
- a) isosceles
- b) right-angled
- c) scalene

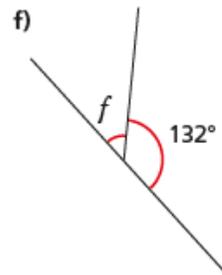
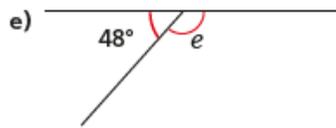
Which triangle was hardest to draw?

8 The diagram shows an equilateral triangle and a square.

The perimeter of the square is 100 cm.

Work out the perimeter of the compound shape.

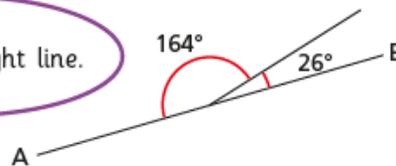




3 Dora draws two angles.



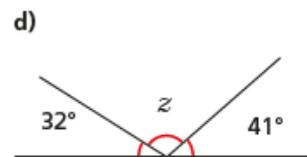
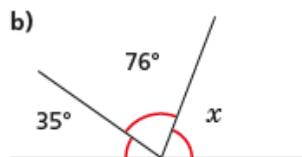
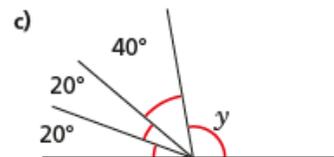
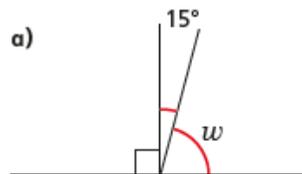
AB is a straight line.



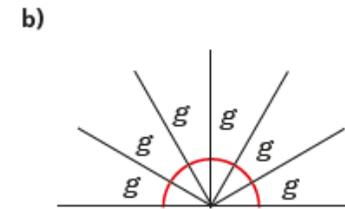
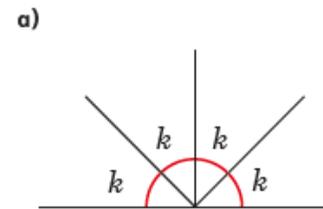
Do you agree with Dora?
Explain your answer.

4 Work out the size of the unknown angles.

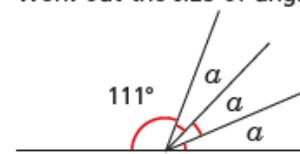
Show the steps in your working.



5 Work out the sizes of the unknown angles.

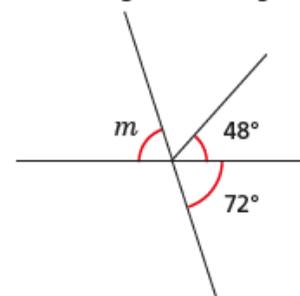


6 Work out the size of angle a .



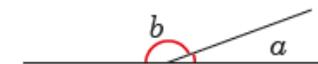
7 Work out the size of angle m .

Show all your working out.



8 Two angles are marked.

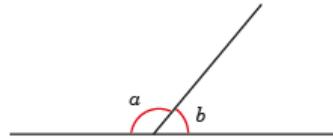
Angle b is eight times the size of angle a .
What is the size of each angle?



Calculate angles

1 Two angles, a and b , are adjacent on a straight line.

a) Measure angles a and b .

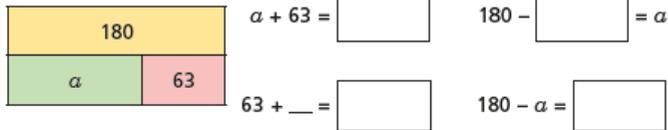


b) What is the total of the two angles?

c) Complete the sentence.

Adjacent angles on a straight line _____

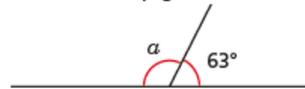
2 a) Complete the fact family for the bar model.



b) Which calculation in part a) helps you work out the value of a ?

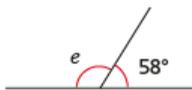
c) Work out the value of a .

d) How does the bar model help you to calculate angle a ?

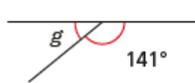


3 Work out the unknown angles.

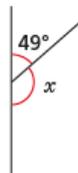
a)



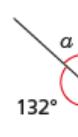
b)



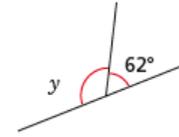
c)



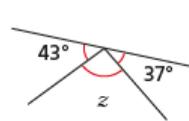
d)



e)



f)



4 Dora is facing in the direction shown by the arrow. She does a full turn clockwise.



a) Show Dora's turn.

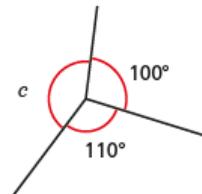
b) How many degrees did Dora turn through?

c) Use your answer to part b) to help you complete the sentence.

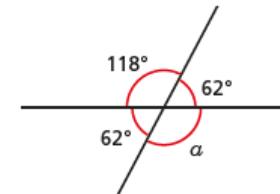
Angles around a point _____

5 Work out the unknown angles.

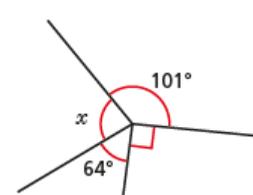
a)



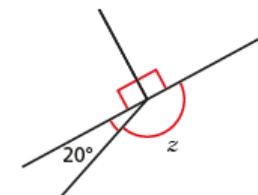
c)



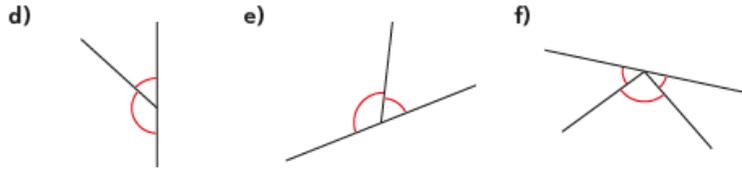
b)



d)



Calculate angles



4 Dora is facing in the direction shown by the arrow. She does a full turn clockwise.

a) Show Dora's turn.

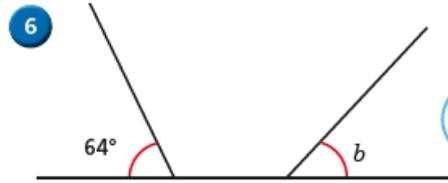
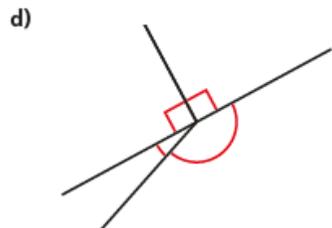
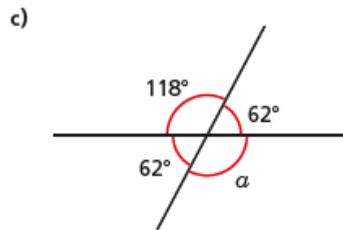
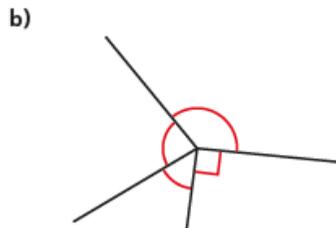
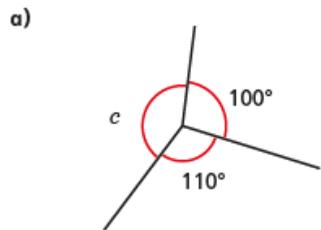
b) How many degrees did Dora turn through?

c) Use your answer to part b) to help you complete the sentence.

Angles around a point _____



5 Work out the unknown angles.



Angle b is 116° because angles on a straight line add up to 180° .

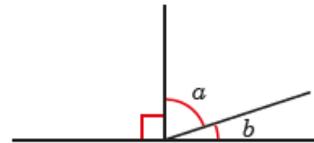
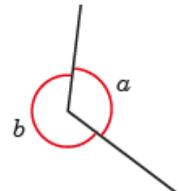


Do you agree with Tommy? Explain your answer.

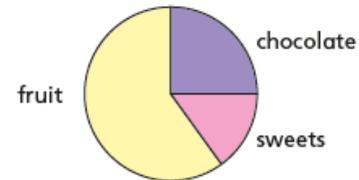
7 Use the information to work out the unknown angles.

a) Angle a is half the size of angle b .

b) Angle a is four times the size of angle b .



8 The pie chart shows some children's favourite snacks.



A quarter of the children said chocolate was their favourite snack. Five times as many children voted for fruit as voted for sweets. Work out the size of the angle for each sector in the pie chart.



Compare angles

1 Here are some angles.

a) Circle the angle that is greater than a right angle.



b) Circle the angle that is less than 90 degrees.



2 Draw three different angles that are less than a right angle.

Various answers.

Compare answers with a partner.

Complete the sentence.

These are all examples of acute angles.



3 Draw two different obtuse angles.

Various answers.

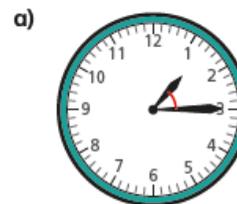
Compare answers with a partner.

Complete the sentence.

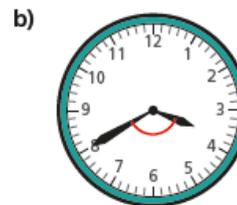
Obtuse angles are greater than 90 degrees

but less than 180 degrees.

4 Is the angle between the hands of the clock acute or obtuse?



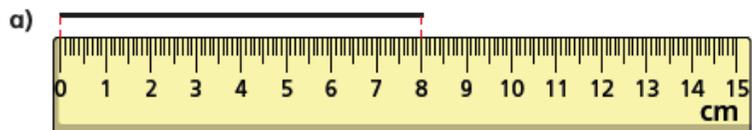
acute



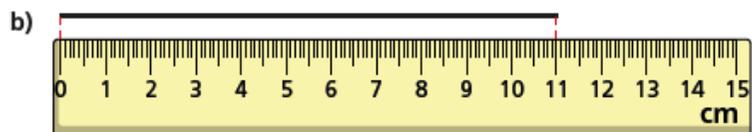
obtuse

Draw accurately

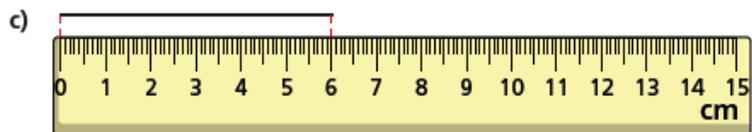
1 How long is each line?



8 cm



11 cm

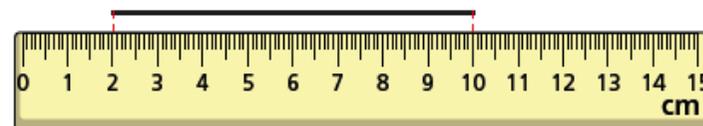


6 cm

2 Draw two lines that are each 5 cm long.



3 Dani says the line is 10 cm long.



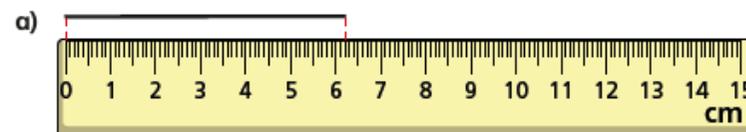
a) What mistake has Dani made?

She hasn't started measuring from 0

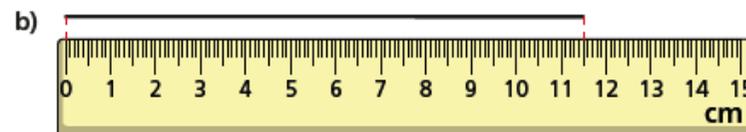
b) How long is the line?

8 cm

4 What is the length of each line in millimetres?



62 mm



115 mm

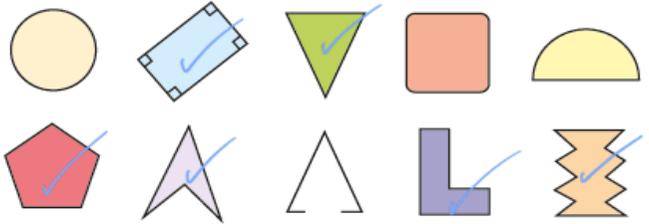
c) _____

mm



Triangles

1 Here are some shapes.

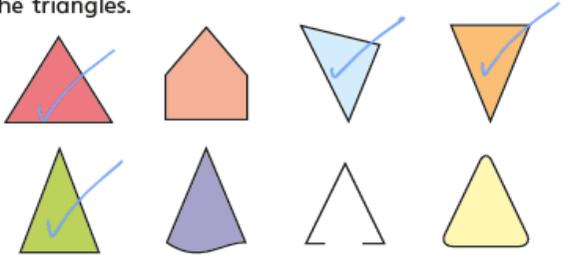


- a) Tick the polygons.
- b) Talk to a partner about the shapes you have not ticked. Why are they not polygons?
- c) Write a definition of a polygon.

A closed shape made up of straight sides.

Compare your definition with a partner's.

2 Tick the triangles.



For any shapes you have not ticked, talk to a partner about why somebody might think they are triangles.

3 Ron is classifying triangles.



This is an upside down triangle.



a) Ron is incorrect. Explain why.

A triangle cannot be upside down.

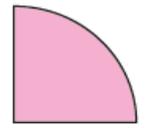
b) What type of triangle is it?

equilateral

4 Annie is identifying shapes.



This shape has 3 sides, so it is a triangle.

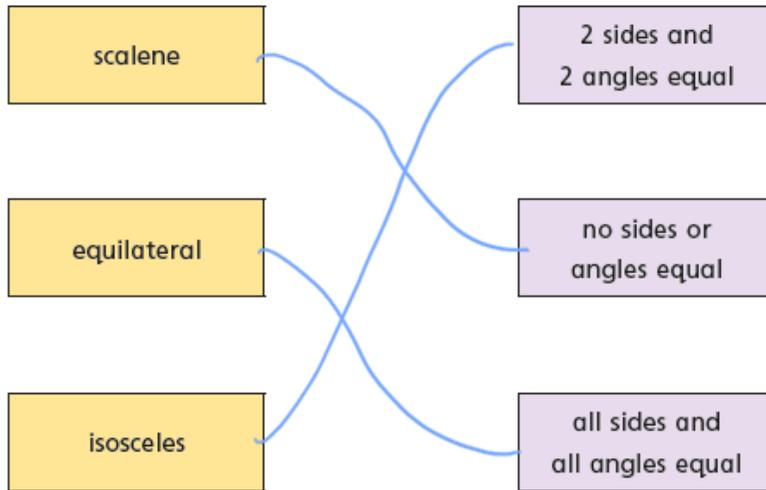


Do you agree with Annie? No

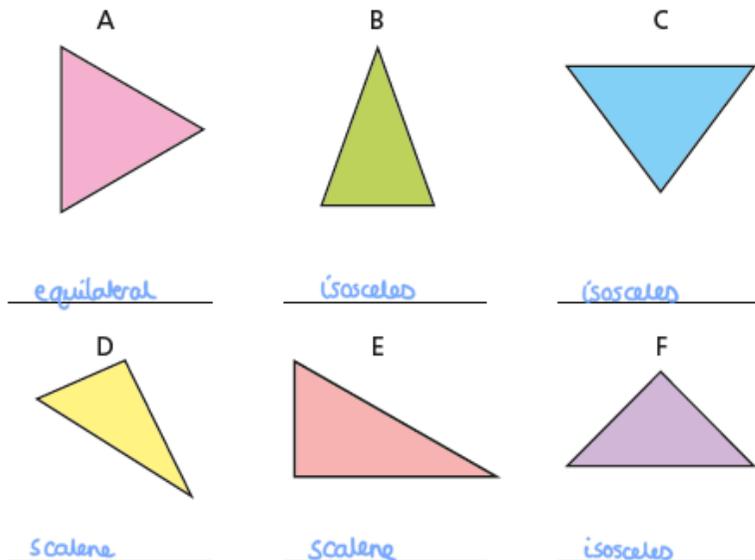
Explain your answer.

A triangle has three straight sides this shape does not.

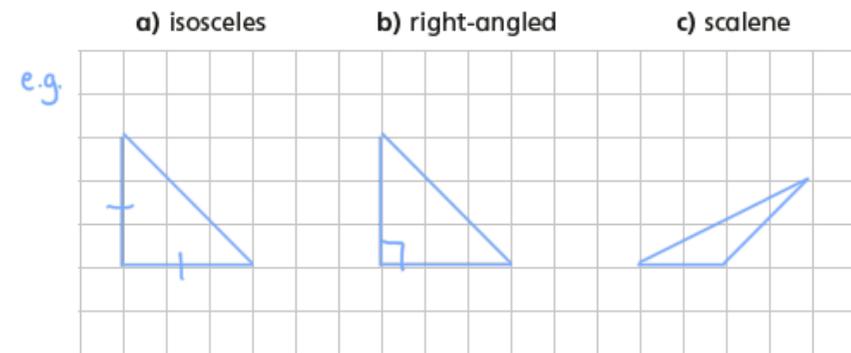
5 Match the type of triangle to the definition.



6 Label each triangle as either equilateral, isosceles or scalene. You will need to measure the side lengths.

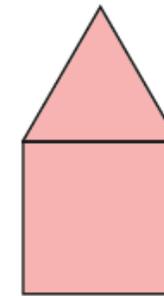


7 Draw each triangle in the grid.



Which triangle was hardest to draw?

8 The diagram shows an equilateral triangle and a square. The perimeter of the square is 100 cm. Work out the perimeter of the compound shape.



perimeter = 125 cm

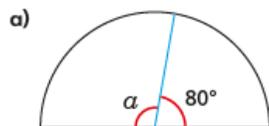


GOLD ANSWERS

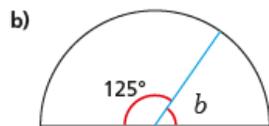


Calculating angles on a straight line

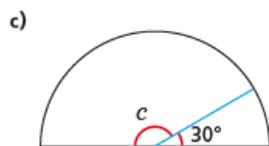
1 Work out the sizes of the unknown angles.



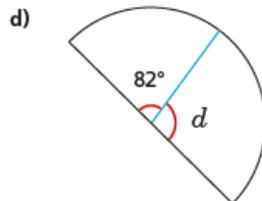
$a = \boxed{100}^\circ$



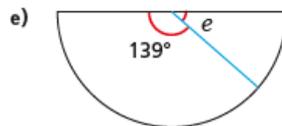
$b = \boxed{55}^\circ$



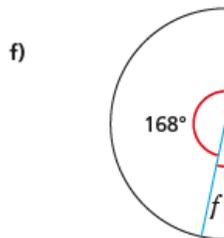
$c = \boxed{150}^\circ$



$d = \boxed{98}^\circ$

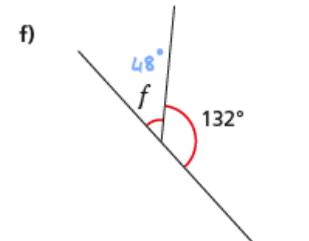
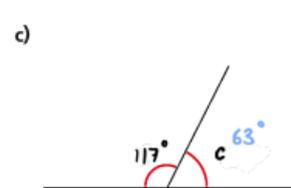
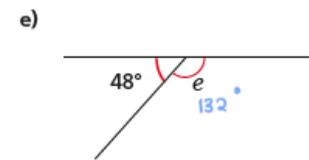
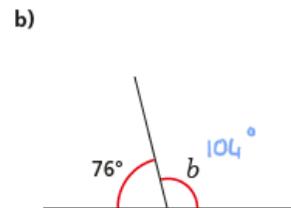
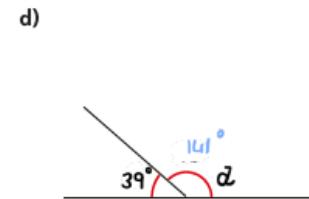
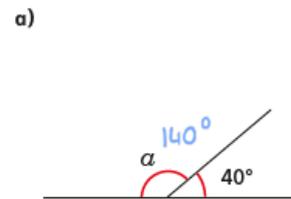


$e = \boxed{41}^\circ$

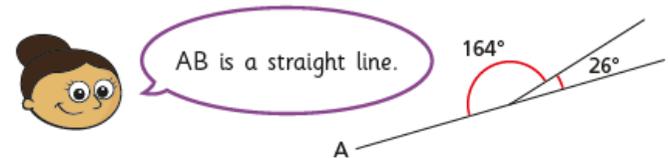


$f = \boxed{12}^\circ$

2 Work out the size of the unknown angles.



3 Dora draws two angles.

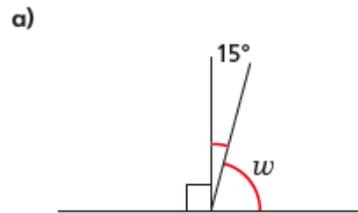


Do you agree with Dora? No

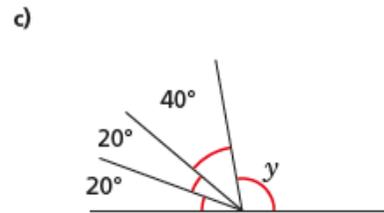
Explain your answer.

4 Work out the size of the unknown angles.

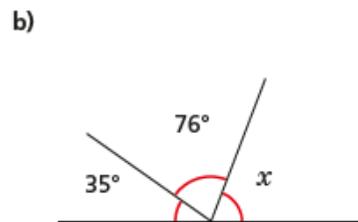
Show the steps in your working.



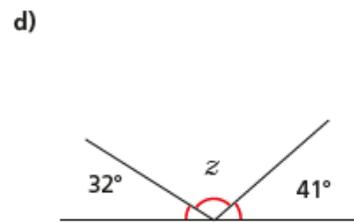
$$w = \boxed{75}^\circ$$



$$y = \boxed{100}^\circ$$

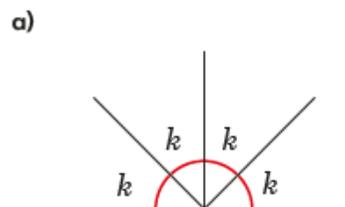


$$x = \boxed{69}^\circ$$

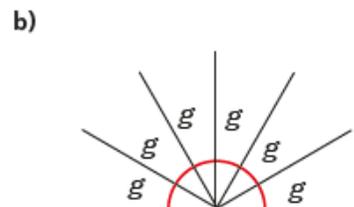


$$z = \boxed{107}^\circ$$

5 Work out the sizes of the unknown angles.

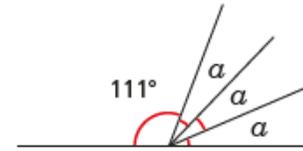


$$k = \boxed{45}^\circ$$



$$g = \boxed{30}^\circ$$

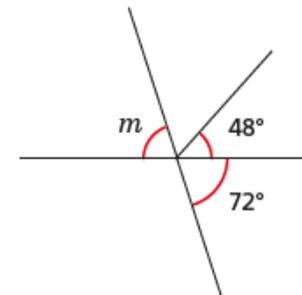
6 Work out the size of angle α .



$$\alpha = \boxed{23}^\circ$$

7 Work out the size of angle m .

Show all your working out.

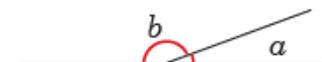


$$m = \boxed{72}^\circ$$

8 Two angles are marked.

Angle b is eight times the size of angle α .

What is the size of each angle?

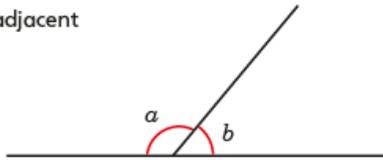


$$\alpha = \boxed{20}^\circ \quad b = \boxed{160}^\circ$$



Calculate angles

- 1 Two angles, a and b , are adjacent on a straight line.



- a) Measure angles a and b .

$a = 130^\circ$ $b = 50^\circ$

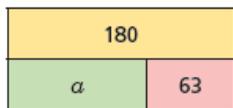
- b) What is the total of the two angles?

180°

- c) Complete the sentence.

Adjacent angles on a straight line sum to 180°

- 2 a) Complete the fact family for the bar model.



$a + 63 = 180$ $180 - 63 = a$
 $63 + a = 180$ $180 - a = 63$

- b) Tick the calculation in part a) that helps you work out the value of a .

- c) Work out the value of a .

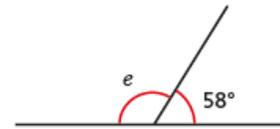
$a = 117$

- d) How does the bar model help you to calculate angle a ?



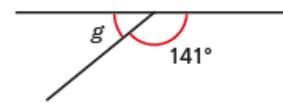
- 3 Work out the unknown angles.

- a)



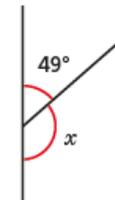
$e = 122^\circ$

- b)



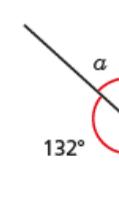
$g = 39^\circ$

- c)



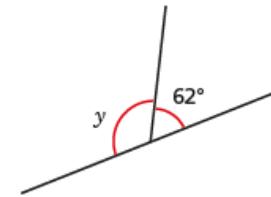
$x = 131^\circ$

- d)



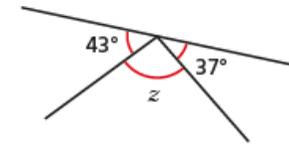
$a = 48^\circ$

- e)



$y = 118^\circ$

- f)



$z = 100^\circ$

- 4 Dora is facing in the direction shown by the arrow. She does a full turn clockwise.



- a) Show Dora's turn on the diagram.

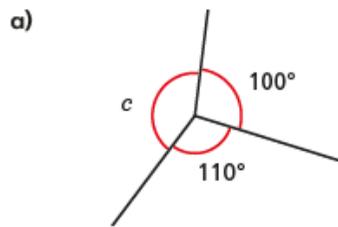
- b) How many degrees did Dora turn through?

360°

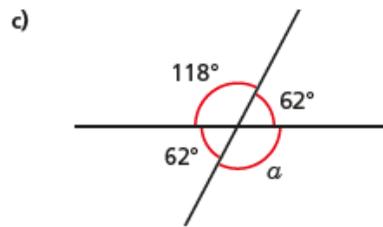
- c) Use your answer to part b) to help you complete the sentence.

Angles around a point sum to 360°

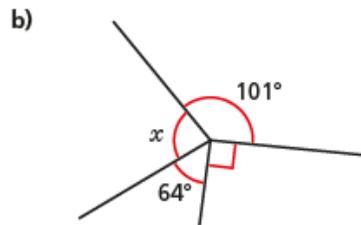
5 Work out the unknown angles.



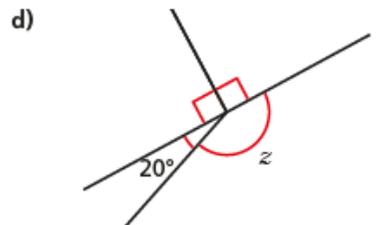
$c = 150^\circ$



$a = 118^\circ$

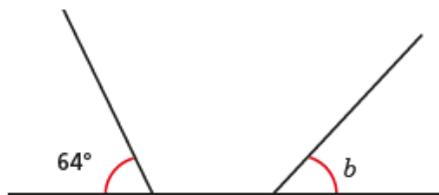


$x = 105^\circ$



$z = 160^\circ$

6



Angle b is 116° because angles on a straight line add up to 180° .



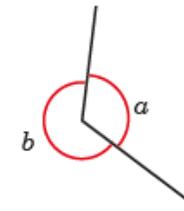
Do you agree with Tommy? No

Explain your answer.

The angles are not adjacent. There is not enough information to work out the size of angle b.

7 Use the information to work out the unknown angles.

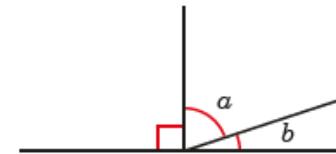
a) Angle a is half the size of angle b .



$a = 120^\circ$

$b = 240^\circ$

b) Angle a is four times the size of angle b .



$a = 72^\circ$

$b = 18^\circ$

8 The pie chart shows some children's favourite snacks.



A quarter of the children said chocolate was their favourite snack. Five times as many children voted for fruit as voted for sweets. Work out the size of the angle for each sector in the pie chart.

chocolate 90°

sweets 45°

fruit 225°