

Section One:

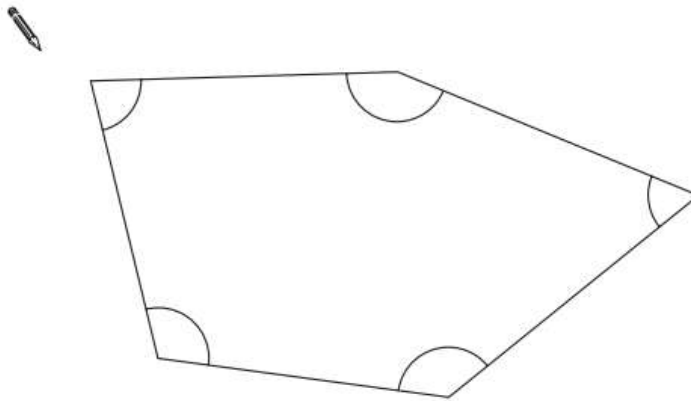
Angles and Lines

1

Look at this shape.

[2009]

Tick (✓) each angle that is **less** than a right angle.



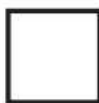
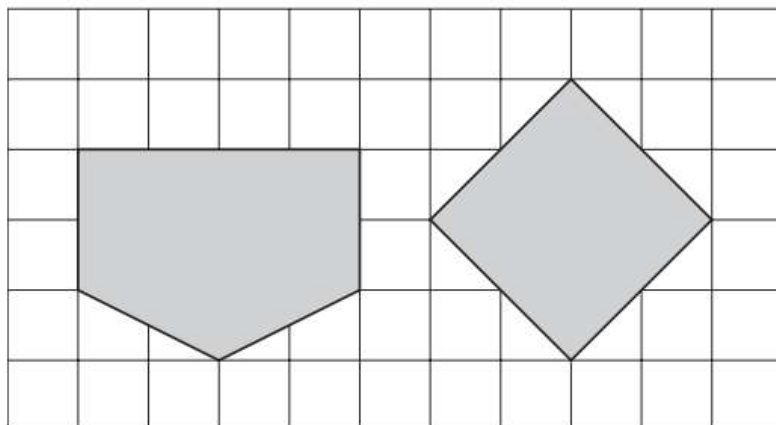
[1 mark]

2

Here are two shapes on a square grid.

[2015]

For each shape, write how many **right angles** it has.

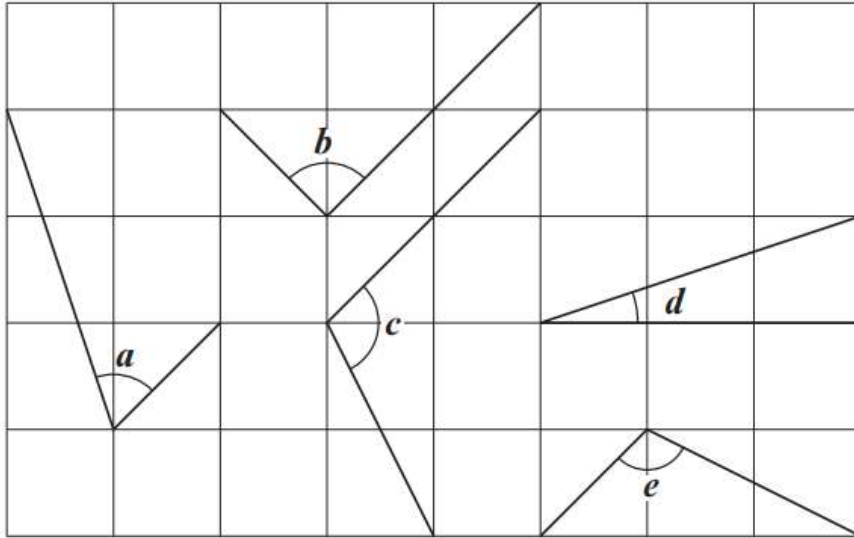


[1 mark]

3

Here are five angles marked on a grid of squares.

[2016]



Write the letters of the angles that are **obtuse**.

Write the letters of the angles that are **acute**.

[2 marks]

4

Look at the letters below.

[2017]

Circle the letter below that has both parallel **and** perpendicular lines.

A C E L Z

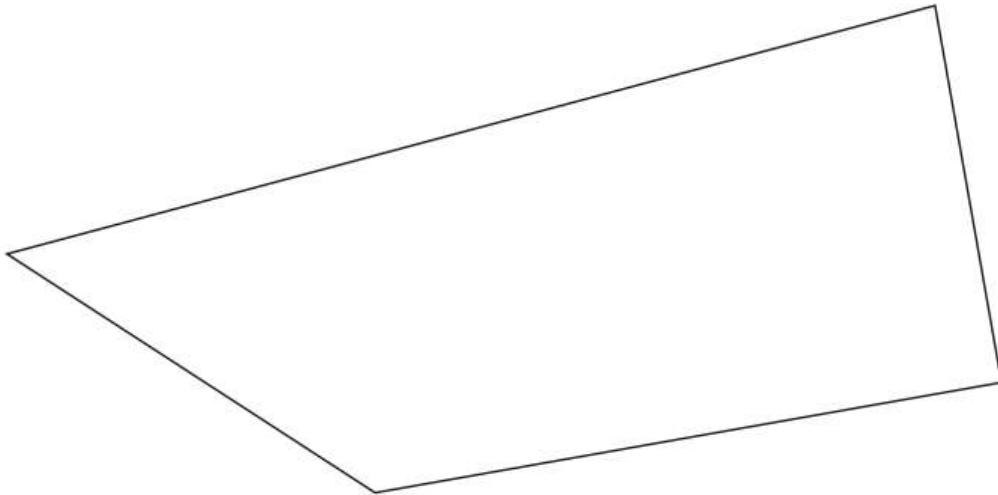
[1 mark]

5

In this shape, one of the angles is **obtuse**.

[2014]

Tick (✓) the obtuse angle.

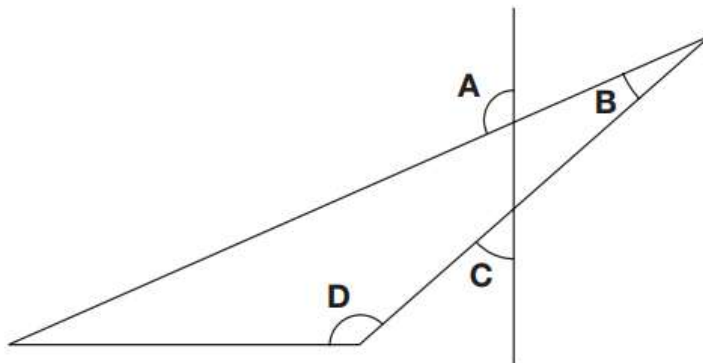


[1 mark]

6

This diagram has four angles marked **A**, **B**, **C** and **D**.

[2011]



Write the letters of the angles that are **obtuse** angles.

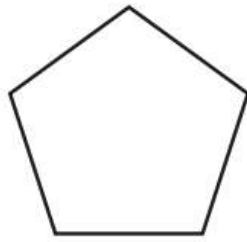


[1 mark]

7

Circle the **pentagon** with exactly **four acute angles**.

[2017]

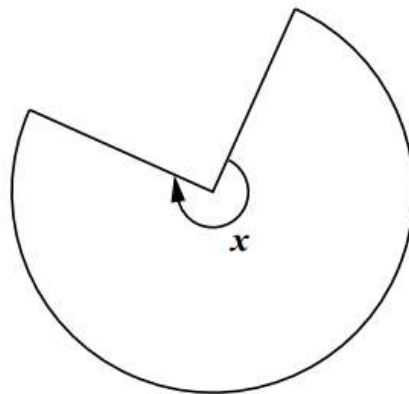


[1 mark]

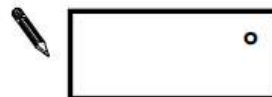
8

This shape is **three-quarters of a circle**.

[2001]



How many degrees is **angle x**?



[1 mark]

9

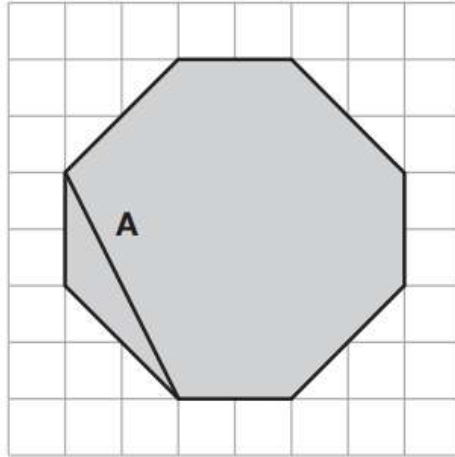
The diagram shows a shaded octagon on a square grid.

[2016S]

Line **A** joins two vertices of the octagon.

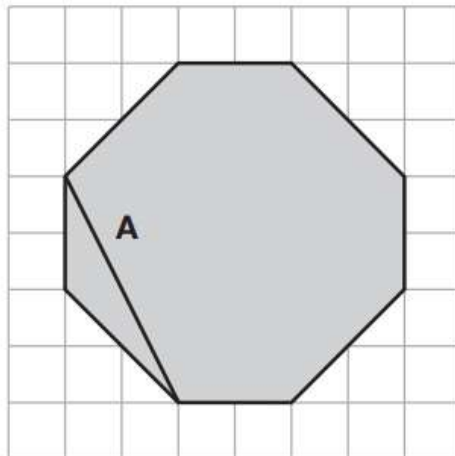
Join two other vertices to draw a line **parallel** to line **A**.

Use a ruler.



Join two vertices to draw a line **perpendicular** to line **A**.

Use a ruler.



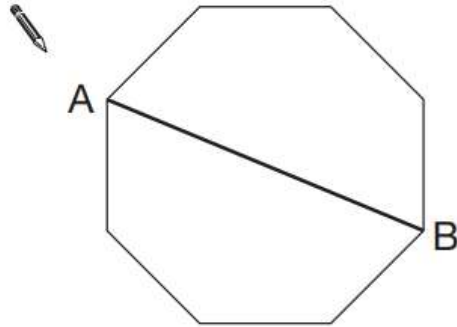
[2 marks]

10

[2008]

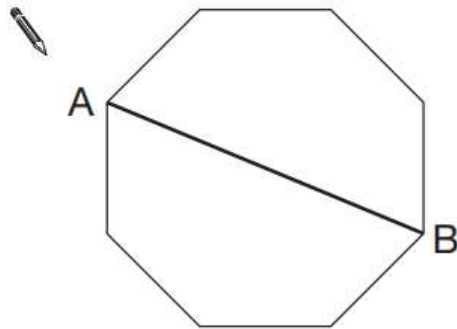
Here is a regular octagon with two vertices joined to make the line AB.

Join two other vertices to draw **one** line that is **parallel** to the line AB.



Here is the octagon again.

Join two vertices to draw **one** line that is **perpendicular** to the line AB.



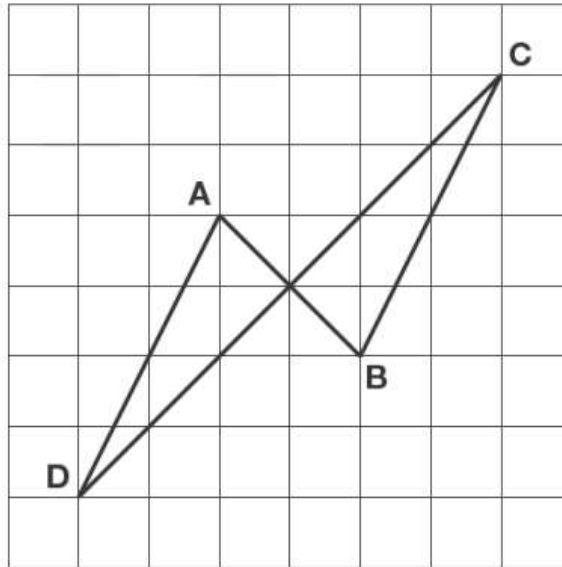
[2 marks]

11

The diagram shows four lines drawn on a square grid.

[2012]

The lines are **AB**, **BC**, **CD** and **DA**.



Which two of the lines are **parallel**?
Circle them in the list below.



AB

BC

CD

DA

Which two of the lines are **perpendicular**?
Circle them in the list below.



AB

BC

CD

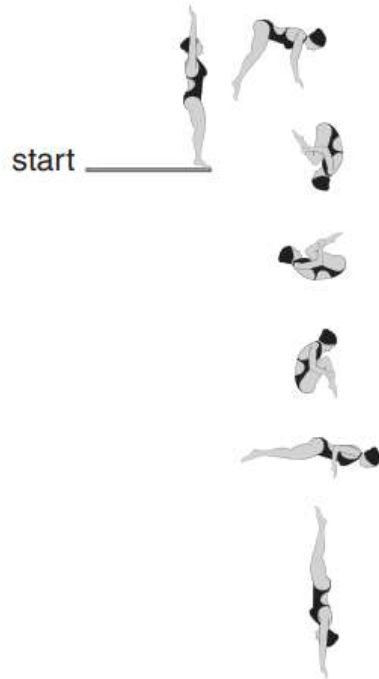
DA

[2 marks]

14

Layla completes one-and-a-half somersaults in a dive.

[2017]

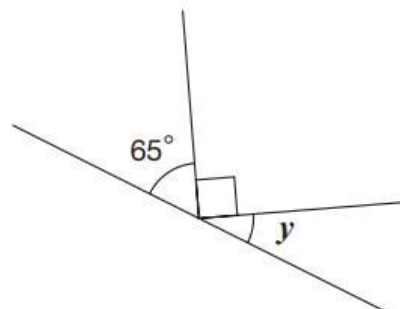


How many **degrees** does Layla turn through in her dive?

[1 mark]

15

[2009]



Not to scale

Calculate the size of angle **y** in this diagram.

Do **not** use a protractor (angle measurer).

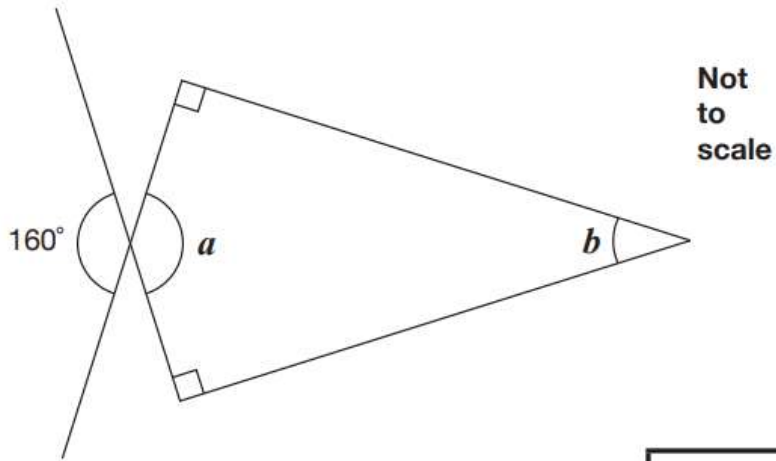
 $y =$

[1 mark]

17

Calculate the size of angles a and b in this diagram.

[2016]



$a =$

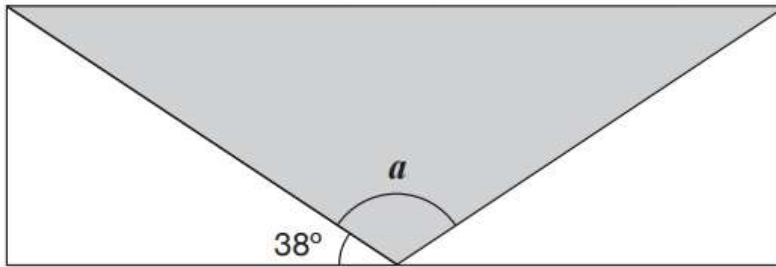
$b =$

[2 marks]

18

A shaded **isosceles** triangle is drawn inside a rectangle.

[2016S]



Not to scale

Calculate the size of angle a .

Show your method

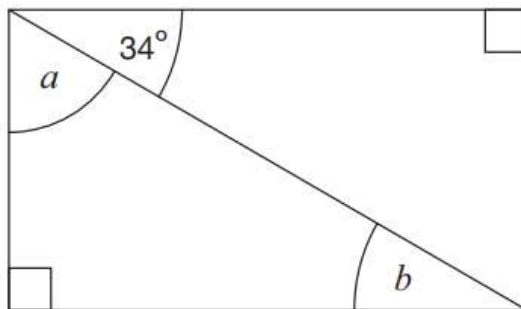


[2 marks]

19

Here is a rectangle.

[2015]



Not to scale

Calculate the size of angles a and b .

Do not measure the angles.

 $a =$

$b =$

[1 mark]

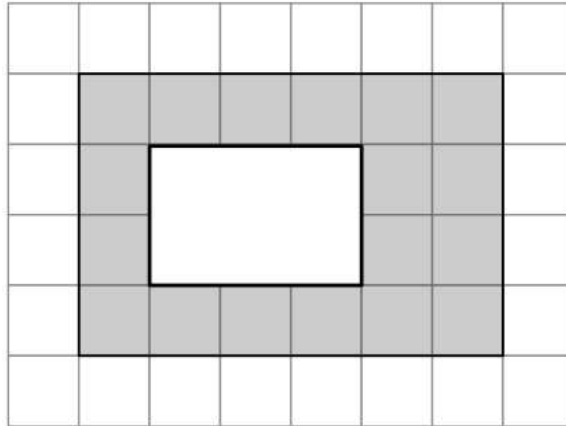
Section Two:

Perimeter and Area

1

Here is a 1 cm square grid. Some of the grid is shaded.

[2018]



What is the area of the shaded shape?

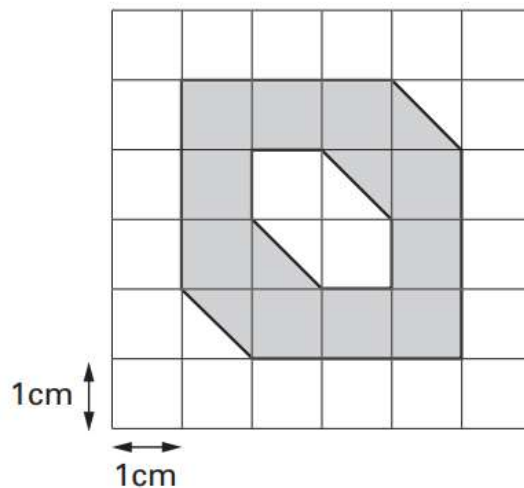
cm²

[1 mark]

2

Here is a 1 cm square grid. Some of the grid is shaded.

[2005]



What is the area of the shaded shape?

cm²

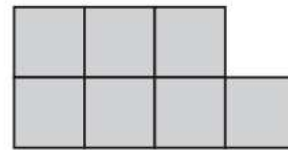
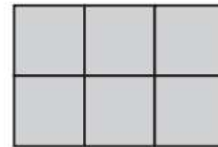
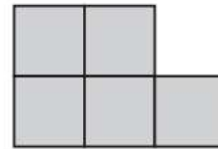
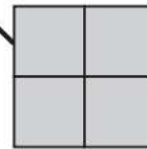
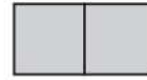
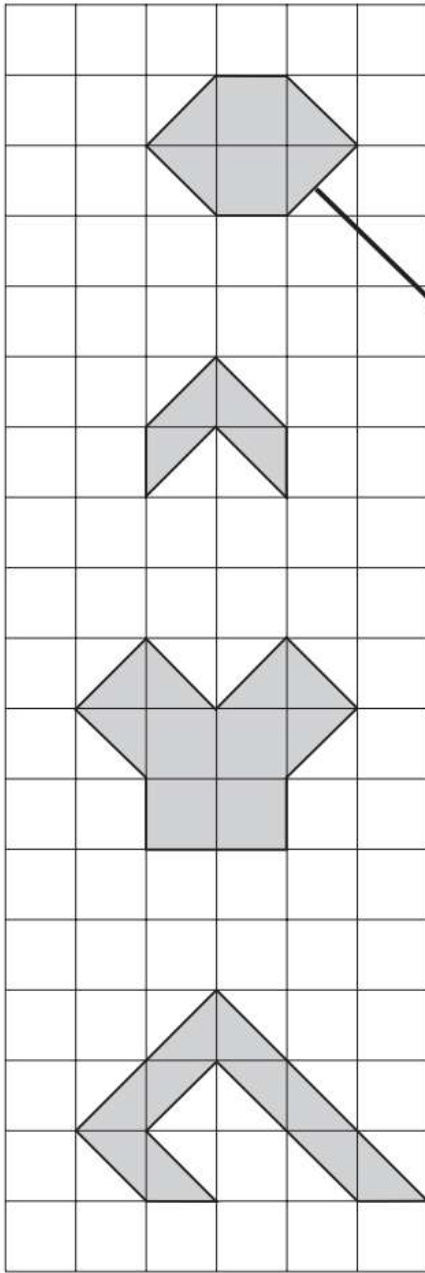
[1 mark]

3

[2002]

Match each shape on the left to one with **equal area** on the right.

One has been done for you.

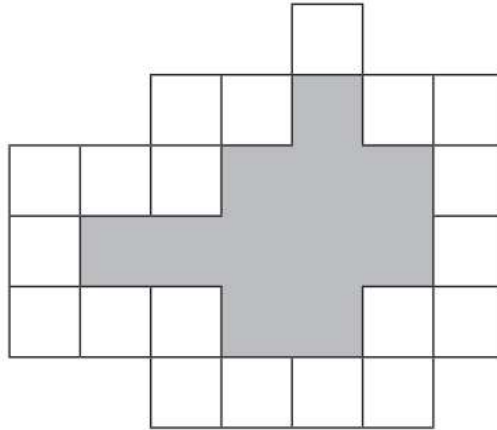


[2 marks]

4

Here is a set of 20 squares around a shaded space.

[2013]



What is the area of the shaded space?



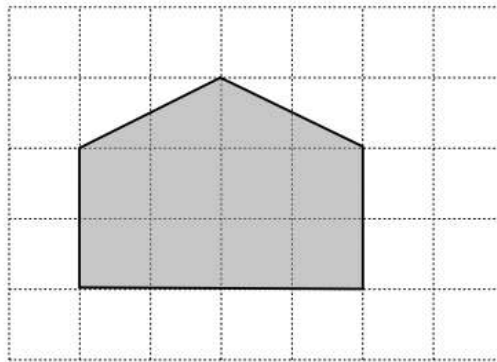
squares

[1 mark]

5

Here is a shaded shape on a 1 cm square grid.

[2012]



What is the area of the shaded shape?

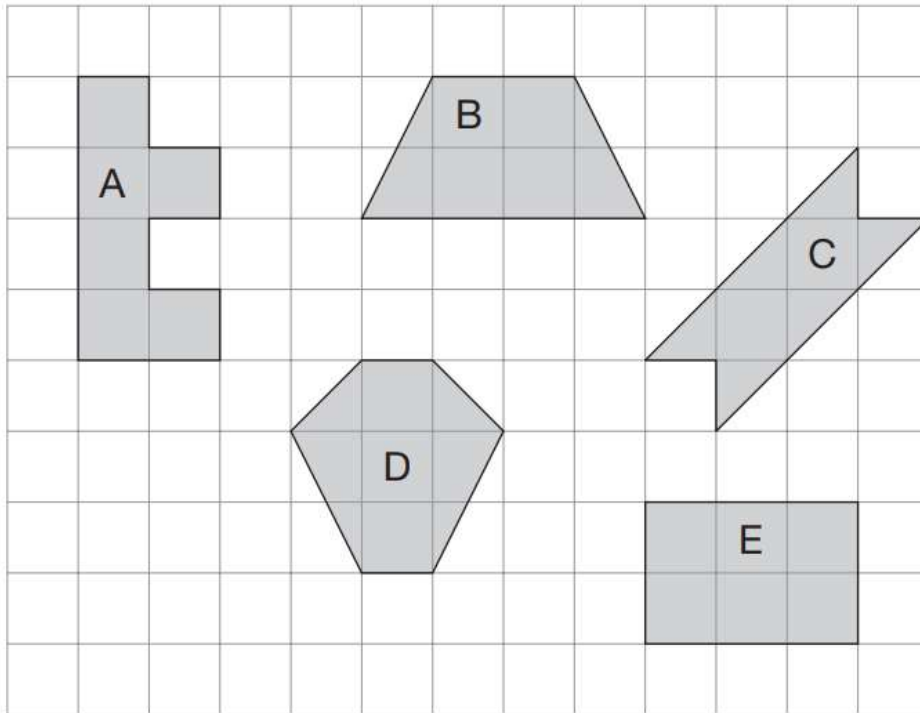
cm²

[1 mark]

6

Here are some shapes on a 1 cm square grid.

[2011]



What is the **perimeter** of shape A?

 cm

Write the letter of the shape that has the **smallest area**.

 _____

[2 marks]

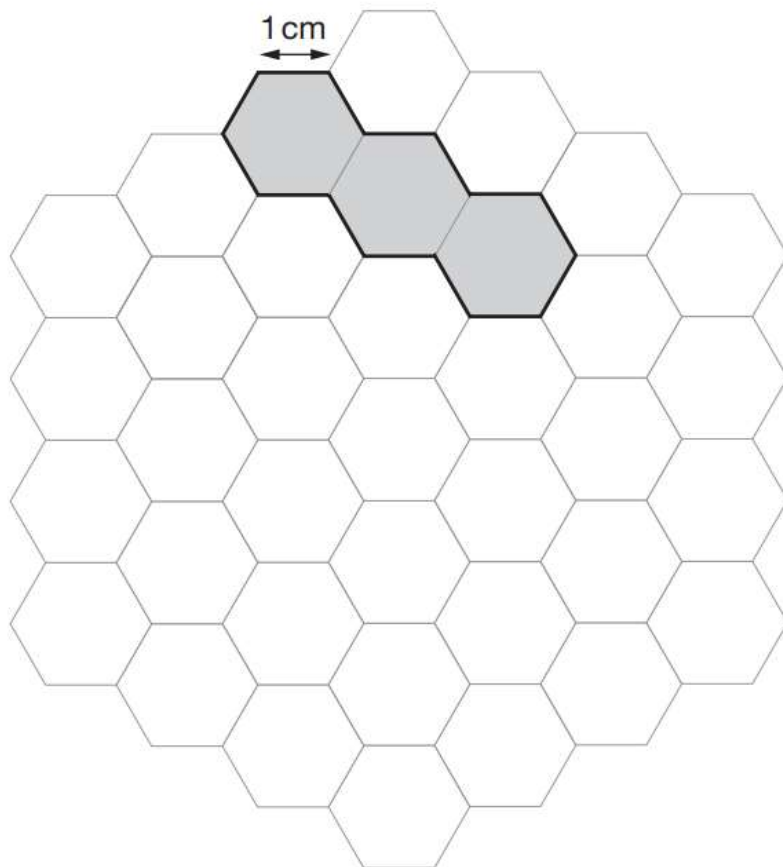
9

Here is a grid of regular hexagons.

[2007]

The shaded shape has an area of 3 hexagons and a perimeter of 14 cm.

Draw another shape on the grid which has an **area** of 4 hexagons and a **perimeter** of 14 cm.

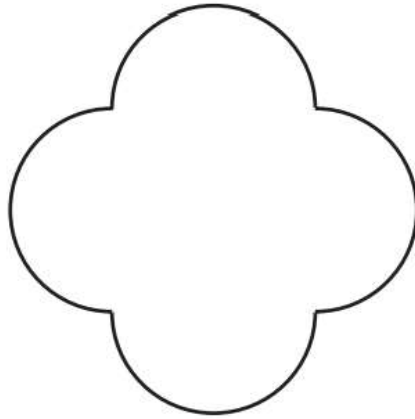


[1 mark]

12

This shape is made out of four identical curves.

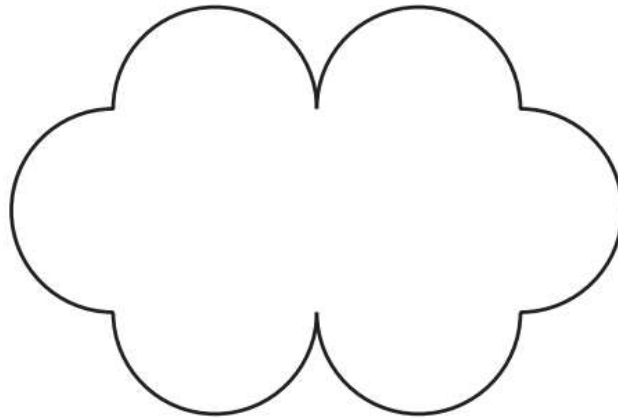
[2014]



**Not
actual
size**

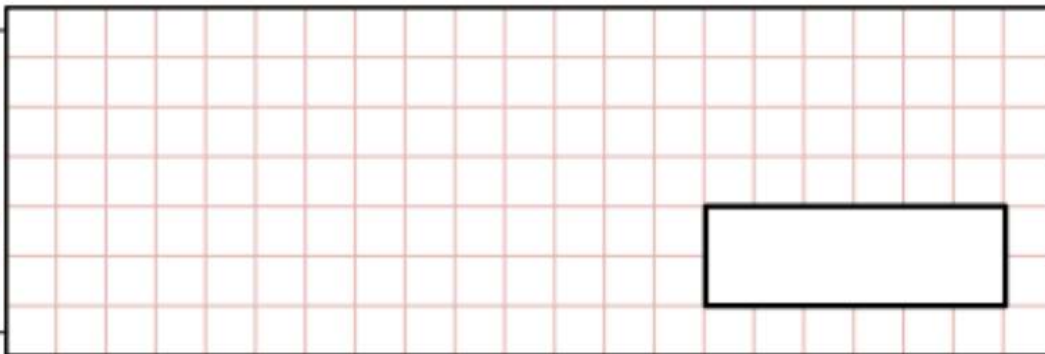
The perimeter of the shape is 28 centimetres.

A new shape is made out of curves of the same size.



What is the perimeter of the new shape?

Show your method



[2 marks]

14


The area of a rugby pitch is 6,108 square metres.

[2016S]

A football pitch measures 112 metres long and 82 metres wide.

How much larger is the area of the football pitch than the area of the rugby pitch?

Show your method



The grid is 14 units wide and 10 units high. A small rectangle is drawn on the grid, representing the football pitch. The rectangle is 4 units wide and 2 units high, starting from the 10th vertical line and the 6th horizontal line from the top-left corner.

[2 marks]

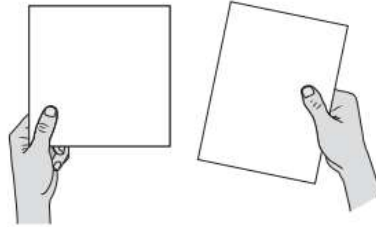
39

18

A square tile measures 20cm by 20cm.

[2017]

A rectangular tile is 3cm **longer** and 2cm **narrower** than the square tile.



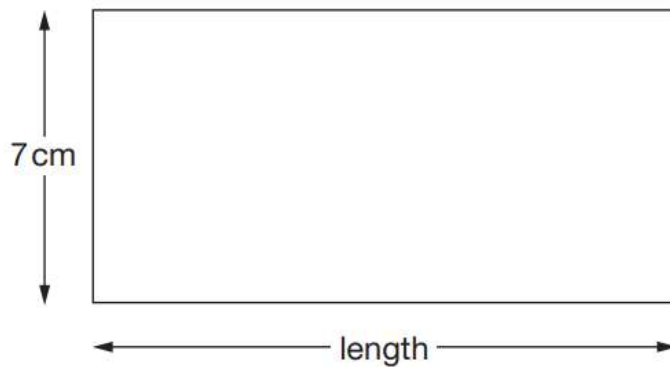
What is the **difference in area** between the two tiles?



[3 marks]

19

[2010]



**Not
actual
size**

The perimeter of this rectangle is 50 centimetres.

Calculate the length of the rectangle.

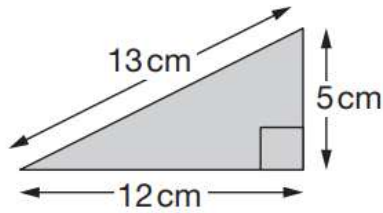


[2 marks]

22

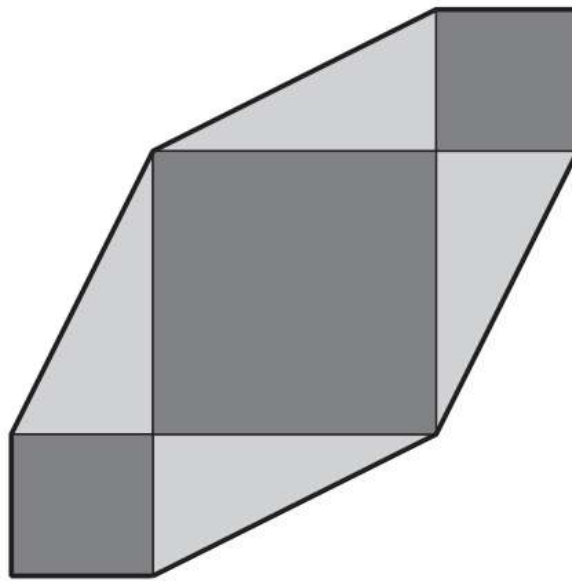
Chen has some right-angled triangular tiles.

[2015]



Not
actual
size

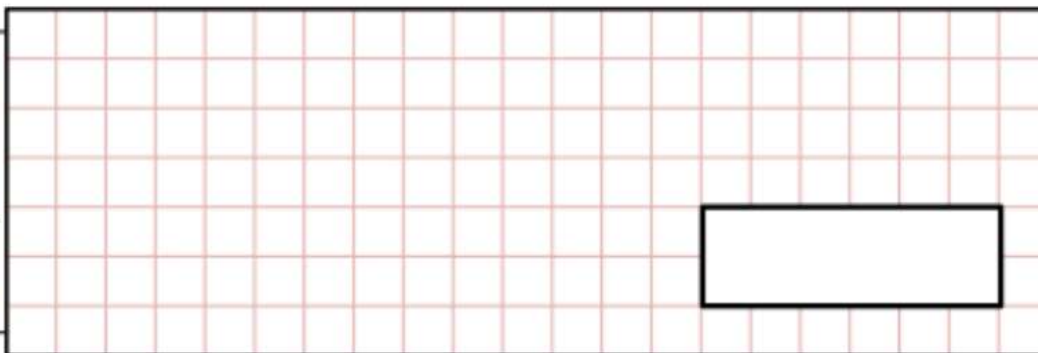
He makes this shape with four of his triangular tiles and three square tiles.



Not
actual
size

What is the **perimeter** of Chen's shape?

Show your method



[2 marks]

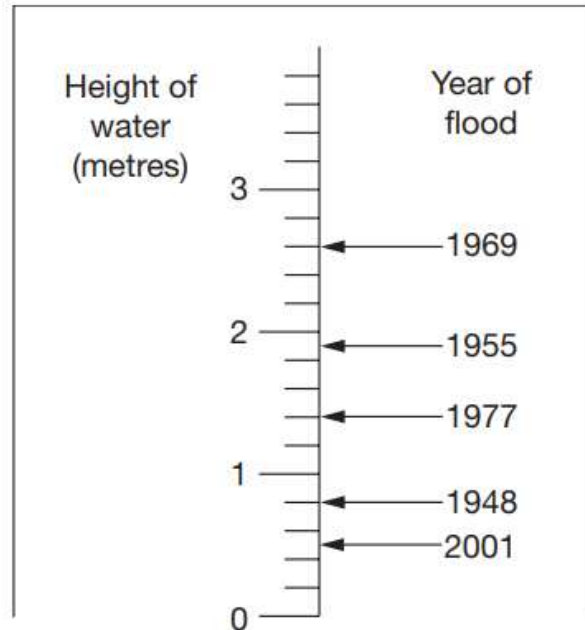
Section Three:

Length, Distance and Height

1

This scale shows the dates of floods and the height of the water in the floods.

[2008]



How high was the water in the 1955 flood?

 m

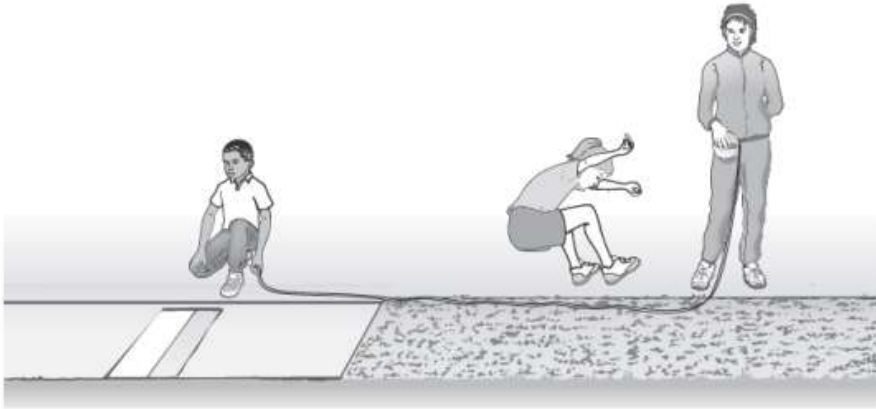
How much higher was the water in the 1969 flood than in the 1948 flood?

 m

[2 marks]

3

[2012]



Seb made a jump of two and a half metres.

Kirsty's jump was 15 centimetres longer.

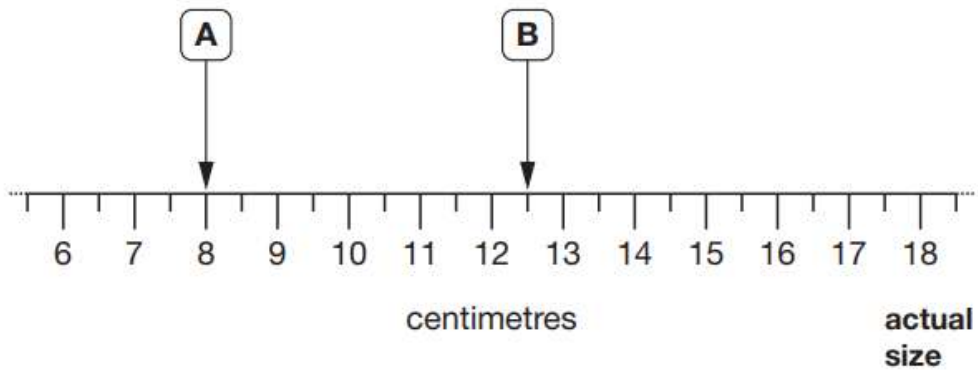
How long was Kirsty's Jump?

[1 mark]

4

Here is part of a centimetre scale, with two points marked.

[2015]



What is the distance between point A and point B?



Point C is **twice as far** from point A as it is from point B.

On the scale above, mark one place where point C could be.

[2 marks]

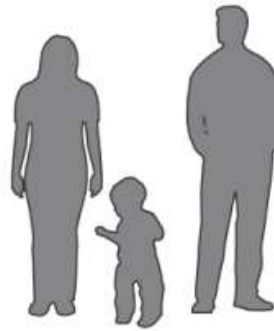
18

Freddie is half as tall as his mother.

[2012]

Freddie is one metre shorter than his father.

Freddie's father is 182 centimetres tall.



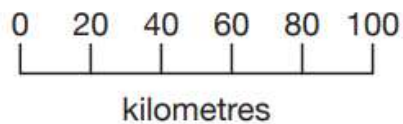
How many centimetres tall is Freddie's mother?

[1 mark]

19

On a map, 1 cm represents 20 km.

[2017]



The distance between two cities is **250 km**.

On the map, what is the distance between the two cities?

Show your method

A large rectangular grid with a 10x10 grid of squares. A smaller rectangular box is drawn on the right side of the grid, spanning 4 squares in width and 2 squares in height.

[2 marks]

Section Four:

Measuring and Drawing Objects

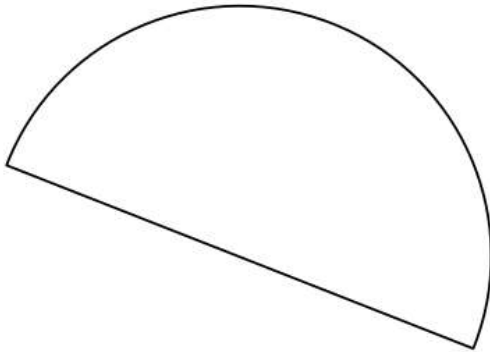
1

Here is a semi-circle.

[2012]

Measure accurately the length of the straight edge.

Give your answer in **centimetres**.



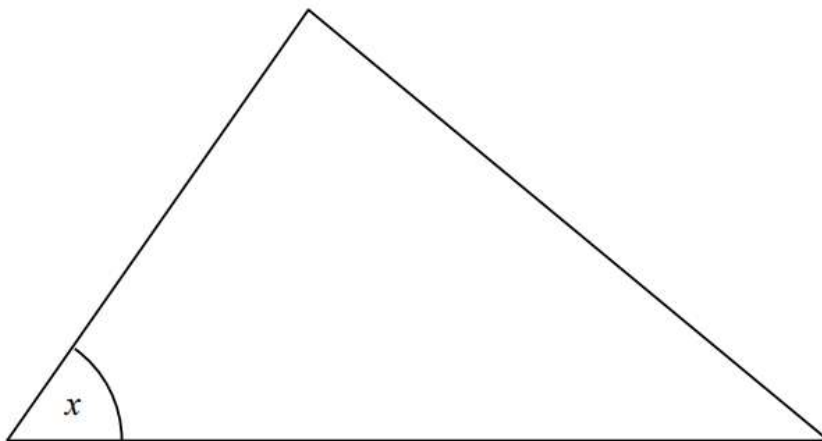
[1 mark]

2

Measure angle x accurately.

[2004]

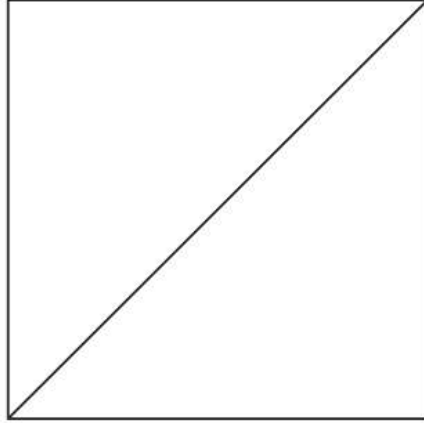
Use a protractor (angle measurer).



[1 mark]

5

[2004]



Measure accurately the length of the **diagonal** of this square.

Give your answer in **centimetres**.



[1 mark]

6

[2016S]

Join dots on the grid to make a quadrilateral that has **3 acute** angles.

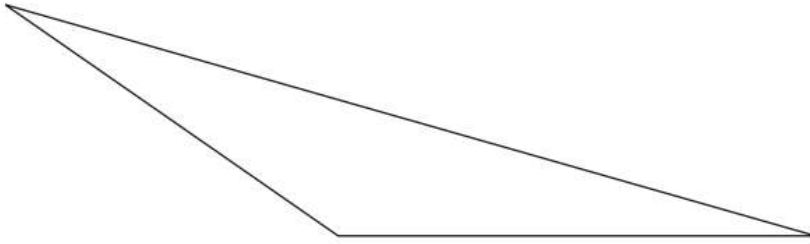


[1 mark]

8

Here is a triangle.

[2016S]



Measure the shortest side accurately, in centimetres.

Measure the largest angle.

[2 marks]

18

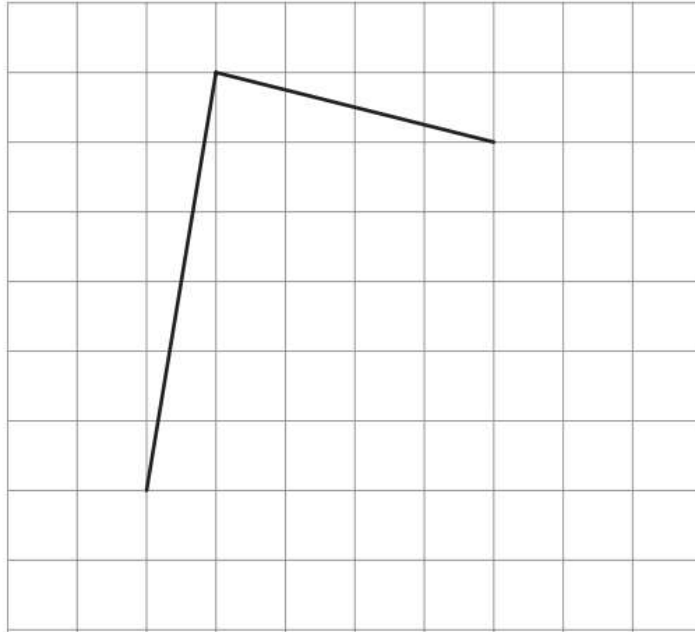
Here is a square grid.

[2011]

Two sides of a kite are drawn on the grid.

Complete the kite by drawing the two missing sides.

Use a ruler.



[1 mark]

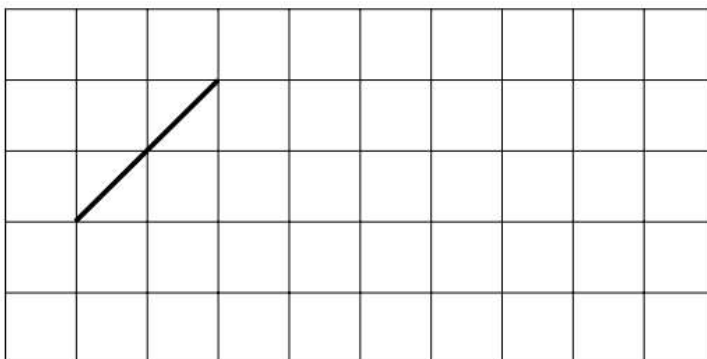
19

This is a centimetre grid.

[2001]

Draw **3 more lines** to make a **parallelogram** with an **area of 10cm^2**

Use a ruler.



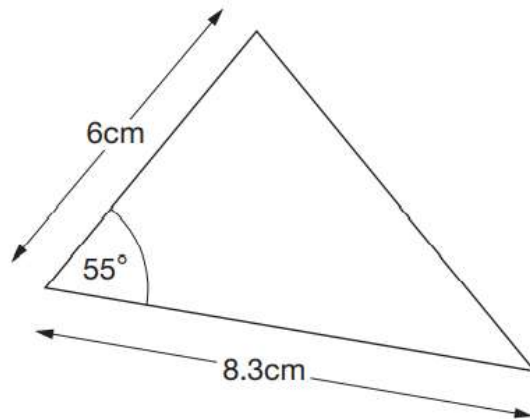
[2 marks]

21

Here is a sketch of a triangle.

[2014]

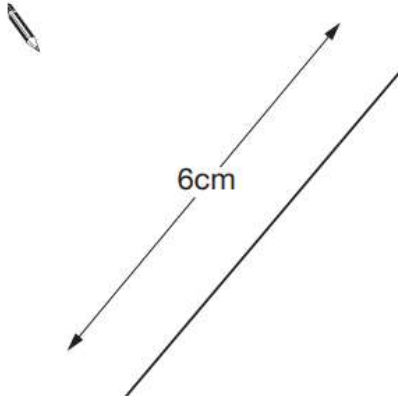
It is not drawn to scale.



Draw the full-size triangle accurately below.

Use a protractor (angle measurer) and a ruler.

One line has been drawn for you.



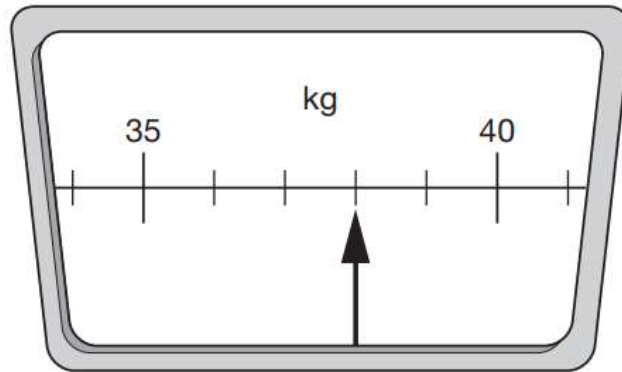
[2 marks]

Section Five:

Mass

1 This scale shows how much Chen weighs.

[2014]



How much does Chen weigh?



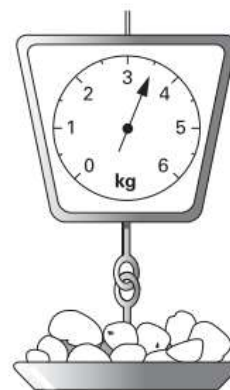
[1 mark]

2 This table shows the weight of some fruits and vegetables.

[2002]

Complete the table.

	grams	kilograms
potatoes	3500	3.5
apples		1.2
grapes	250	
ginger		0.03



[2 marks]

10

Here are four masses.

[2011]

2
kilograms

1
tonne

800
grams

$\frac{1}{2}$
kilogram

Write the masses in order, starting with the lightest.



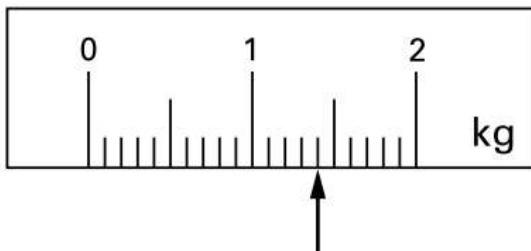
lightest

[2 marks]

11

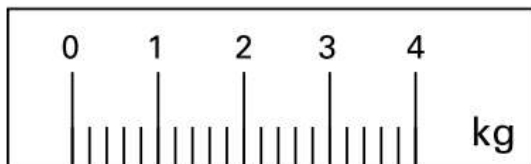
On this scale, the arrow (\uparrow) shows the weight of this pineapple.

[2001]



Here is a **different** scale.

Mark with an arrow (\uparrow) the weight of the **same** pineapple.



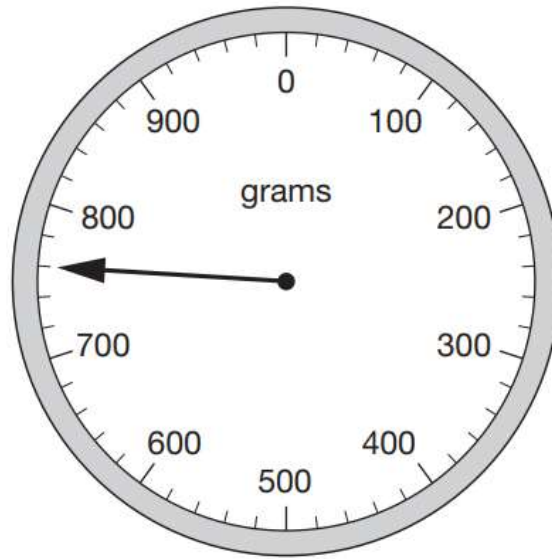
[1 mark]

14

Joe places some apples on a weighing scale.

[2011]

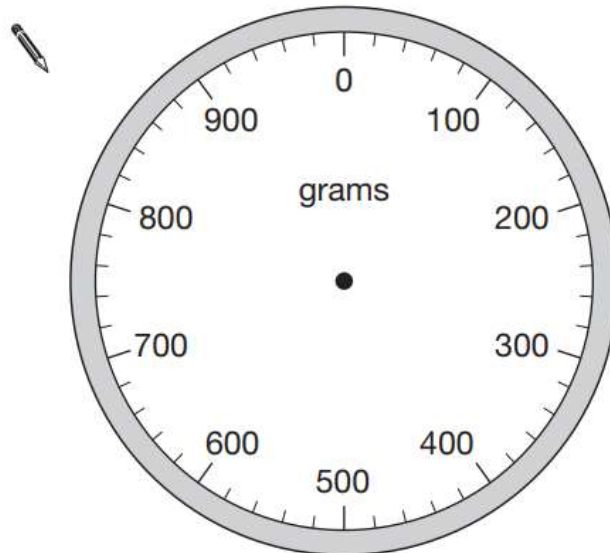
The pointer shows the mass of the apples.



He takes away one apple.

The mass goes down by 120 grams.

Draw the pointer in its new position on the scale below.



[1 mark]