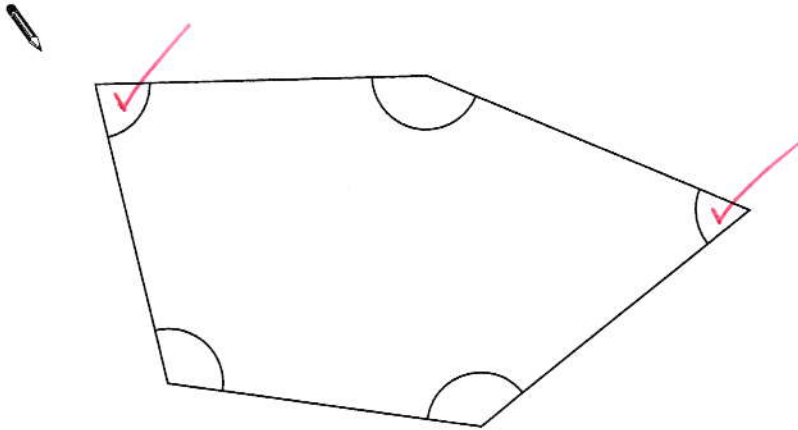


1

Look at this shape.

[2009]

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



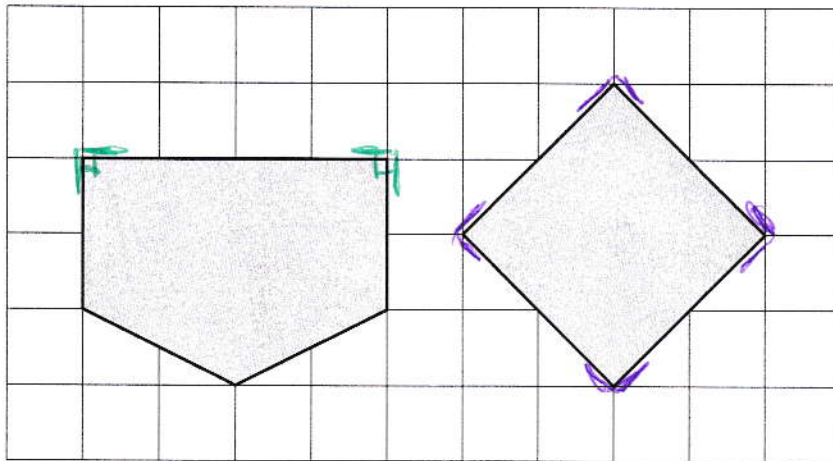
[1 mark]

2

Here are two shapes on a square grid.

[2015]

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



2

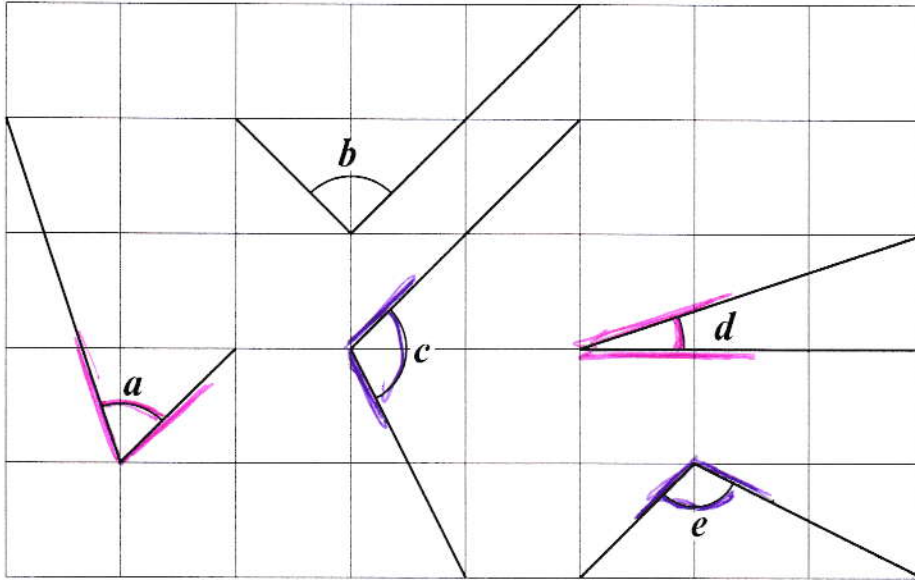
4

[1 mark]

3

Here are five angles marked on a grid of squares.

[2016]



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

C, E

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

A, D

[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

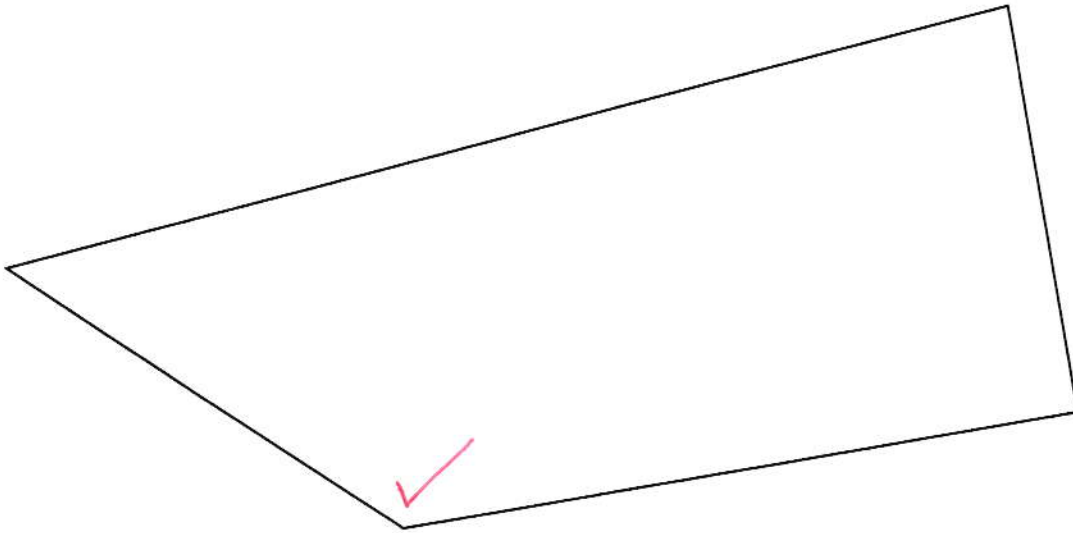
[1 mark]

5

In this shape, one of the angles is **obtuse**. [MORE THAN 90°]

[2014]

Tick (✓) the obtuse angle.

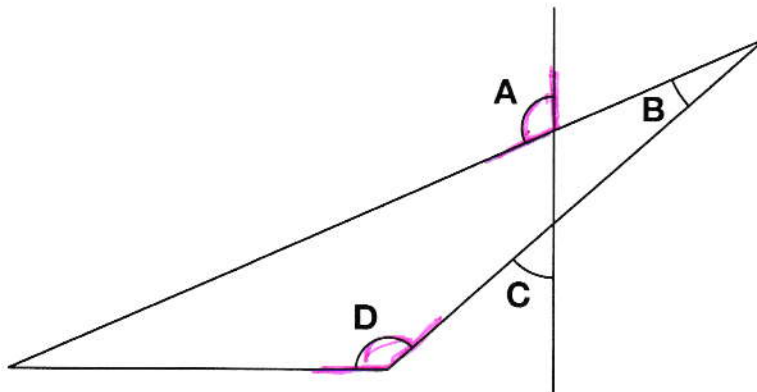


[1 mark]

6

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

[2011]



[MORE THAN 90°]

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



A, D

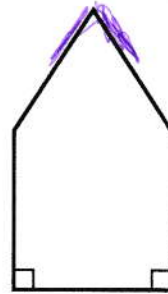
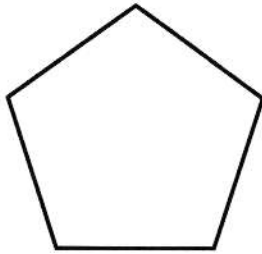
[1 mark]

7

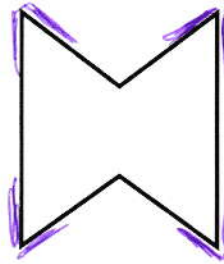
Circle the pentagon with exactly four acute angles.

[2017]

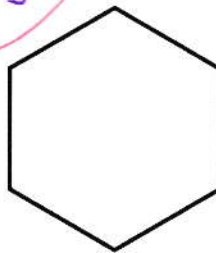
FIVE SIDES



[LESS THAN 90°]



← NOT A PENTAGON!

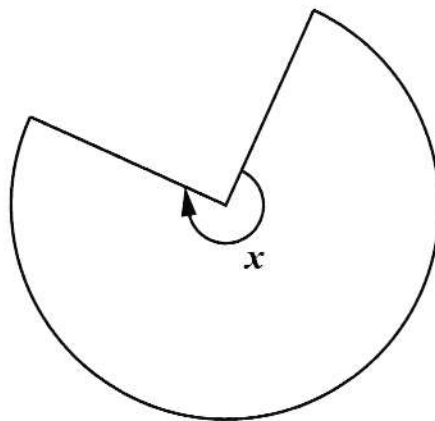


[1 mark]

8

This shape is three-quarters of a circle.

[2001]



$\frac{3}{4}$ OF 360

$\frac{1}{4}$ OF 360 = 90

so, $\frac{3}{4}$ IS 3×90

How many degrees is angle x?

270°

[1 mark]

9

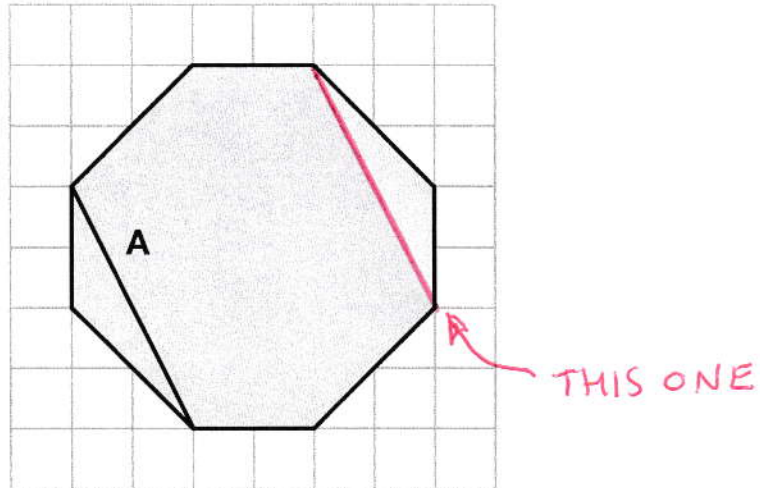
The diagram shows a shaded octagon on a square grid.

[2016S]

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

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

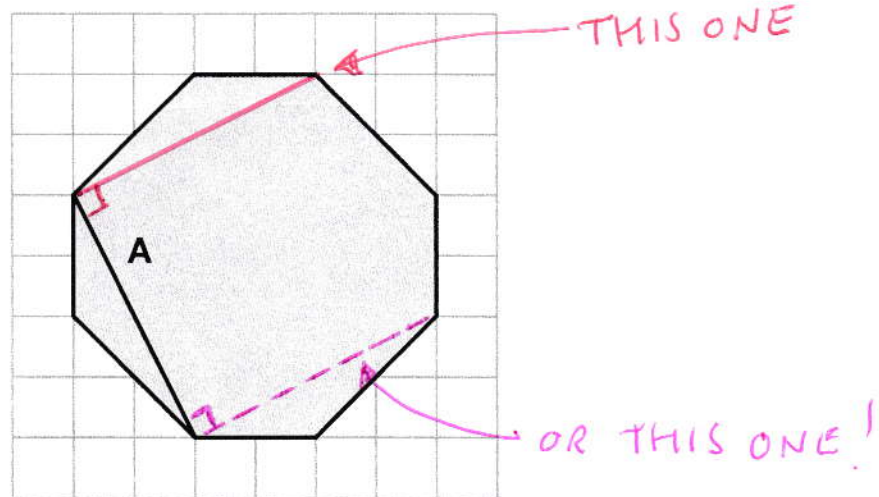
Use a ruler.



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

[AT RIGHT ANGLES]

Use a ruler.



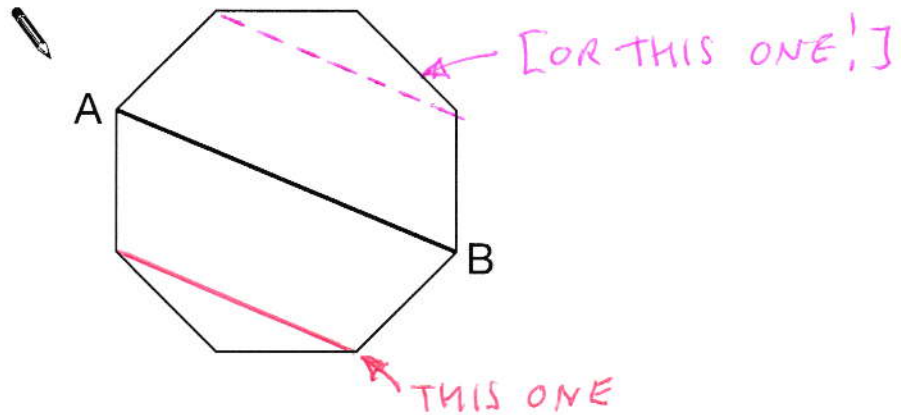
[2 marks]

10

[2008]

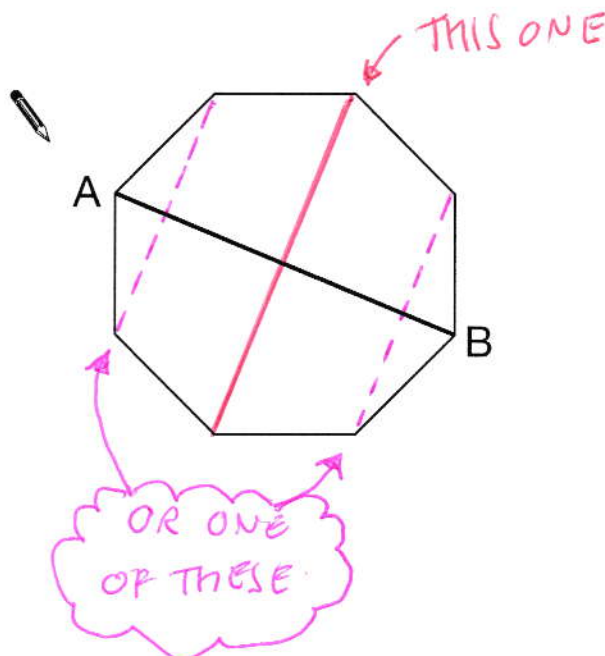
Here is a regular octagon with two vertices joined to make the line AB.

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.



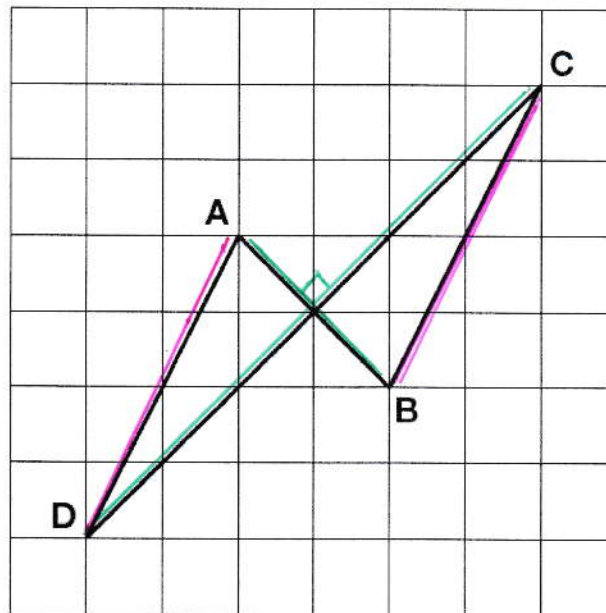
[2 marks]

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

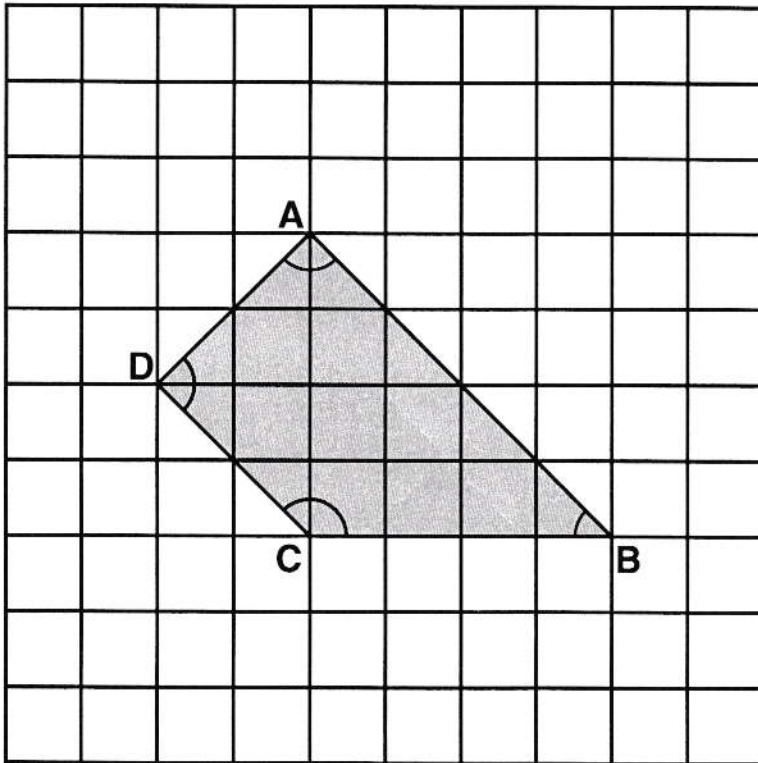
CD

DA

[2 marks]

Here is a shape on a square grid.

[2000]



For each sentence, put a tick (✓) if it is true.

Put a cross (✗) if it is not true.

Angle **C** is an **obtuse** angle.



Angle **D** is an **acute** angle.



[IT'S A RIGHT-
ANGLE]

Line **AD** is **parallel** to line **BC**.



Line **AB** is **perpendicular** to line **AD**.

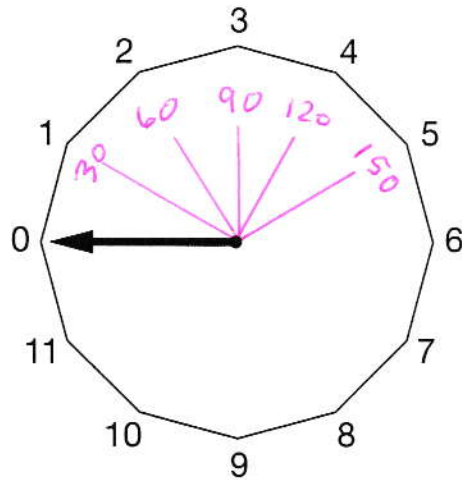


[2 marks]

13

This regular 12-sided shape has a number at each vertex.

[2008]

Ben turns the pointer from zero, clockwise through 150°

Which number will the pointer now be at?



5

Nisha turns the pointer clockwise from number 2 to number 11

Through how many degrees does the pointer turn?

TURNS 9 'UNITS'



270°

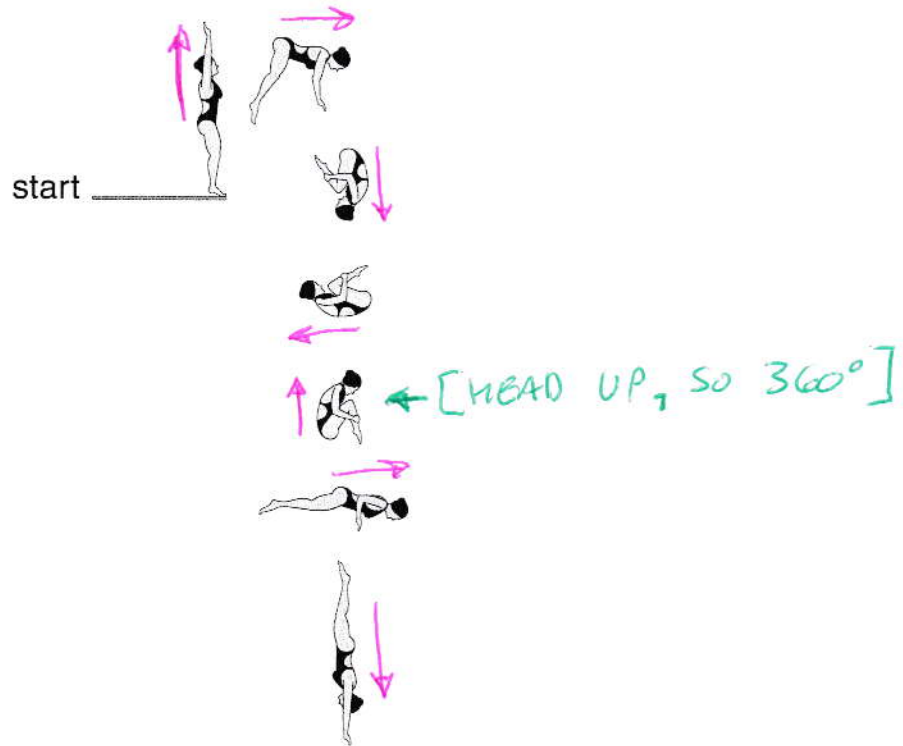
$$9 \times 30 = 270^\circ$$

[2 marks]

14

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

[2017]

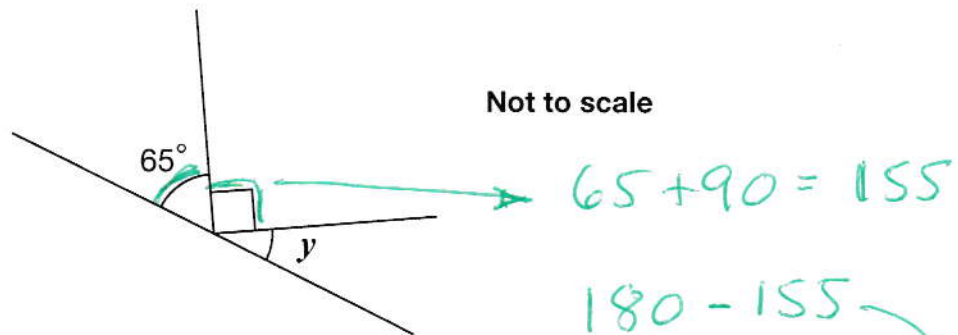
How many **degrees** does Layla turn through in her dive?

540°

[1 mark]

15

[2009]

Calculate the size of angle y in this diagram.Do **not** use a protractor (angle measurer).

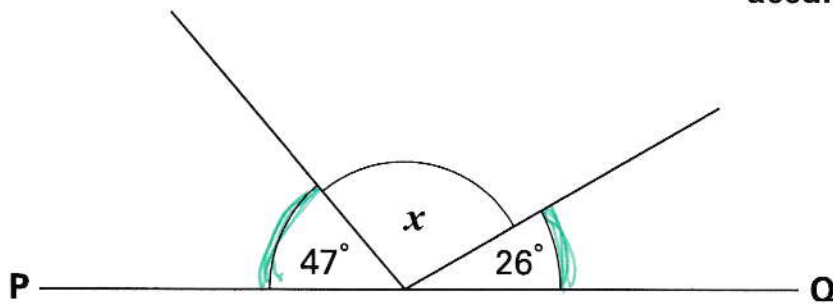
$y = 25^\circ$

[1 mark]

16

PQ is a straight line.

[Extra]

Not drawn
accurately

$$\boxed{\text{1ST}} \quad 47 + 26 = 73$$

Calculate the size of angle x .Do **not** use a protractor (angle measurer).

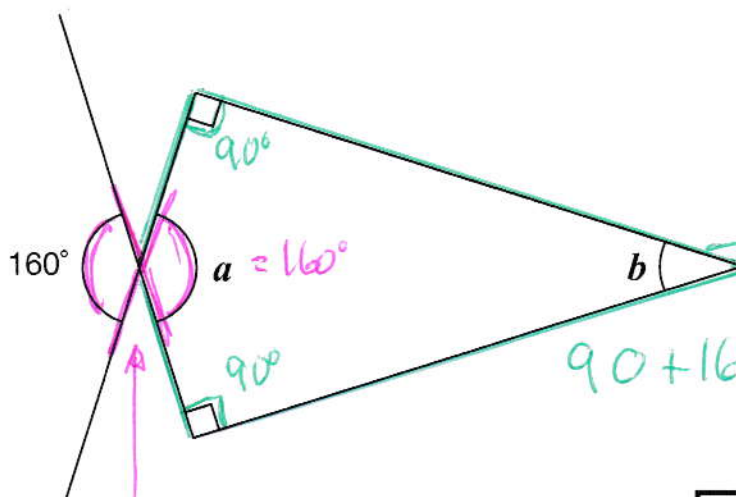
$$\boxed{\text{2ND}} \quad 180 - 73 \quad \longrightarrow \quad \boxed{107^\circ}$$

[1 mark]

17

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

[2016]

Not
to
scale

ANGLES IN A
QUADRILATERAL
ADD TO 360°

$$90 + 160 + 90 = 340$$

$$360 - 340 = 20$$

$$a = \boxed{160^\circ}$$

$$b = \boxed{20^\circ}$$

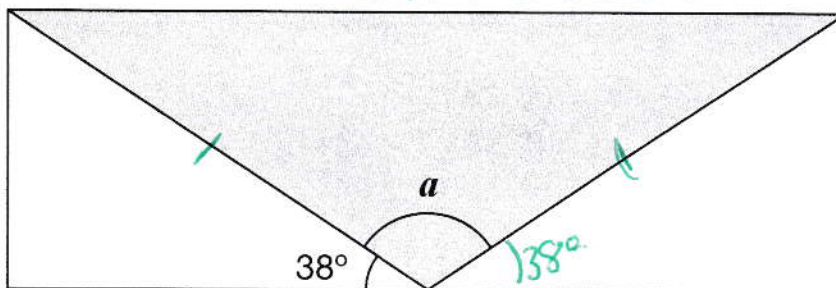
[VERTICALLY
OPPOSITE
ANGLES ARE EQUAL]

[2 marks]

18

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

[2016S]

Not
to
scaleCalculate the size of angle a .

Show your method

$$38 + 38 = 76$$

$$a = 180 - 76$$

$$= \underline{\underline{104^\circ}}$$

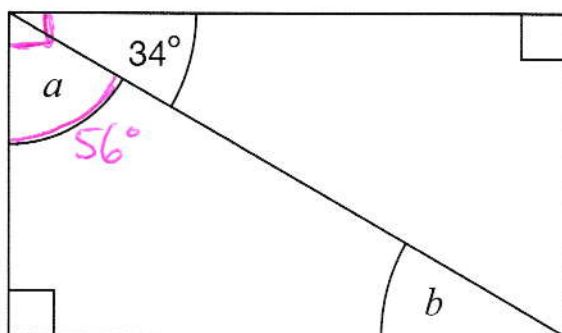
104°

[2 marks]

19

Here is a rectangle.

[2015]

Not to
scaleCalculate the size of angles a and b .

Do not measure the angles.

$$a = 90 - 34$$

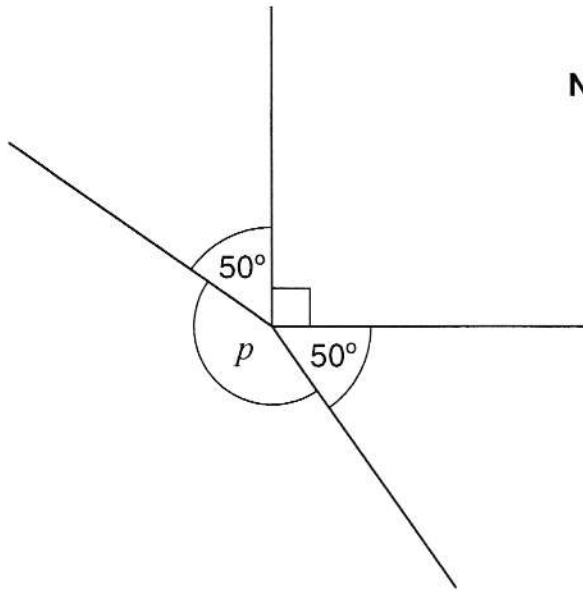
$$b = 180 - (90 + 56)$$

$$a = \boxed{56^\circ}$$

$$b = \boxed{34^\circ}$$

[1 mark]

Not to scale



Calculate the size of angle p in the diagram.

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

$$50 + 90 + 50 = 190$$

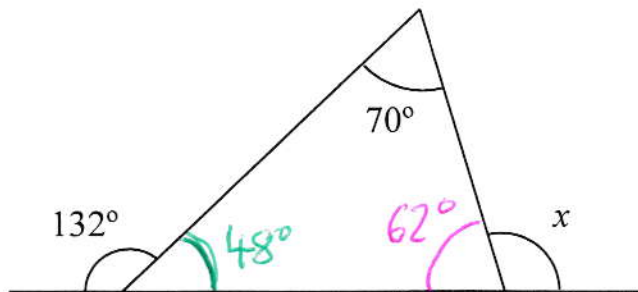
$$360 - 190 = \underline{170^\circ}$$



170°

[1 mark]

Calculate the size of angle x



Show your method

$$[1] \quad 180 - 132 = 48^\circ$$

$$[2] \quad 180 - (48 + 70) = 62^\circ$$

$$[3] \quad x = 180 - 62 = \underline{\underline{118^\circ}}$$

118°

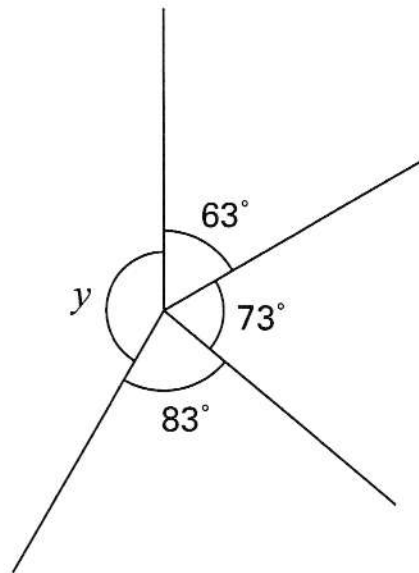
[THERE ARE QUICKER WAYS TO DO THIS!] [2 marks]

22

Calculate the size of angle y

[Extra]

$$\begin{array}{r} \boxed{1ST} \quad 63 \\ \quad \quad 73 \\ + \quad 83 \\ \hline \quad \quad 219 \end{array}$$



Not drawn accurately

 $\boxed{2ND}$

$$360 - 219 = \underline{\underline{141^\circ}}$$

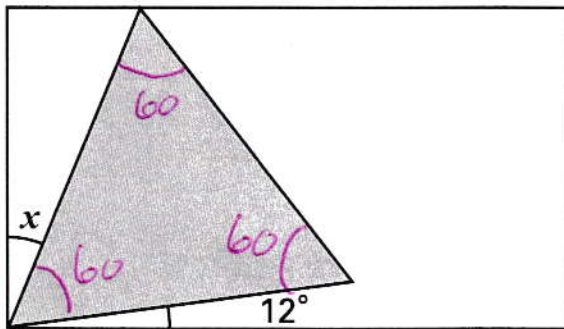
$$\boxed{141^\circ}$$

[2 marks]

23

Here is an **equilateral triangle** inside a **rectangle**. 90° ANGLES!
60° ANGLES!

[2001]



Not to scale

Calculate the value of angle x .Do **not** use a protractor (angle measurer).

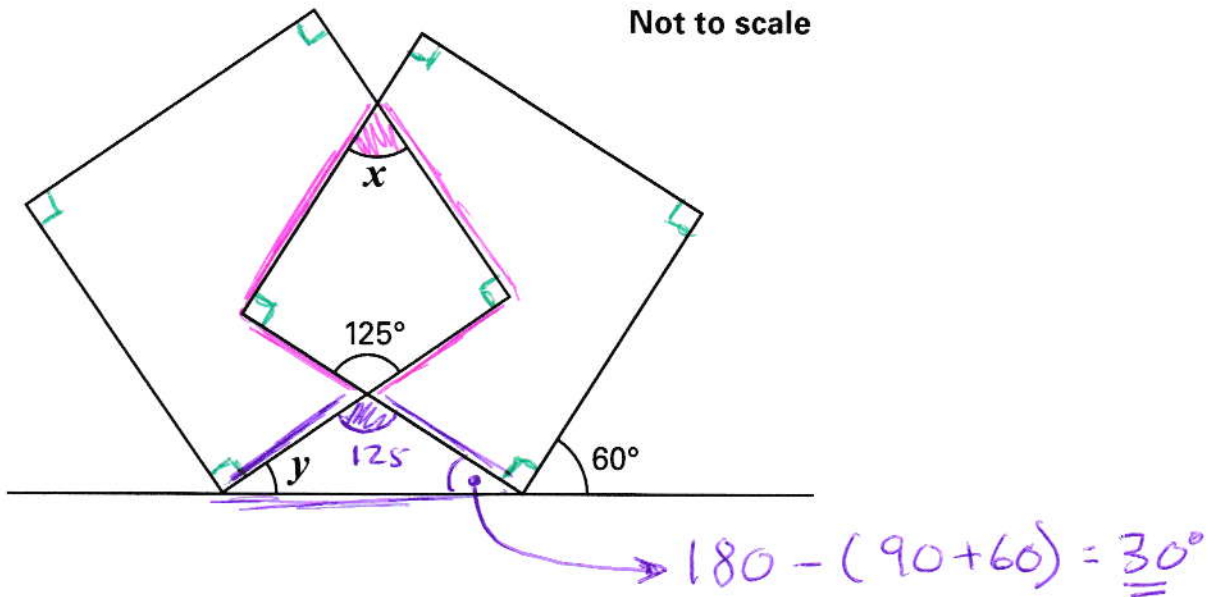
Show your method

$$\begin{aligned} 60 + 12 &= 72 \\ x &= 90 - 72 \\ &= \underline{\underline{18^\circ}} \end{aligned}$$

$$\boxed{18}$$

[2 marks]

The diagram shows two overlapping squares and a straight line.



Calculate the value of **angle x** and the value of **angle y**.

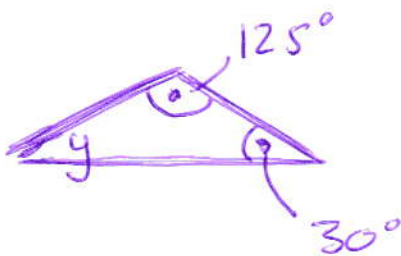
Do **not** use a protractor (angle measurer).

$$x = 360 - (90 + 125 + 90)$$

$$= 360 - 305$$

$x =$

$y =$



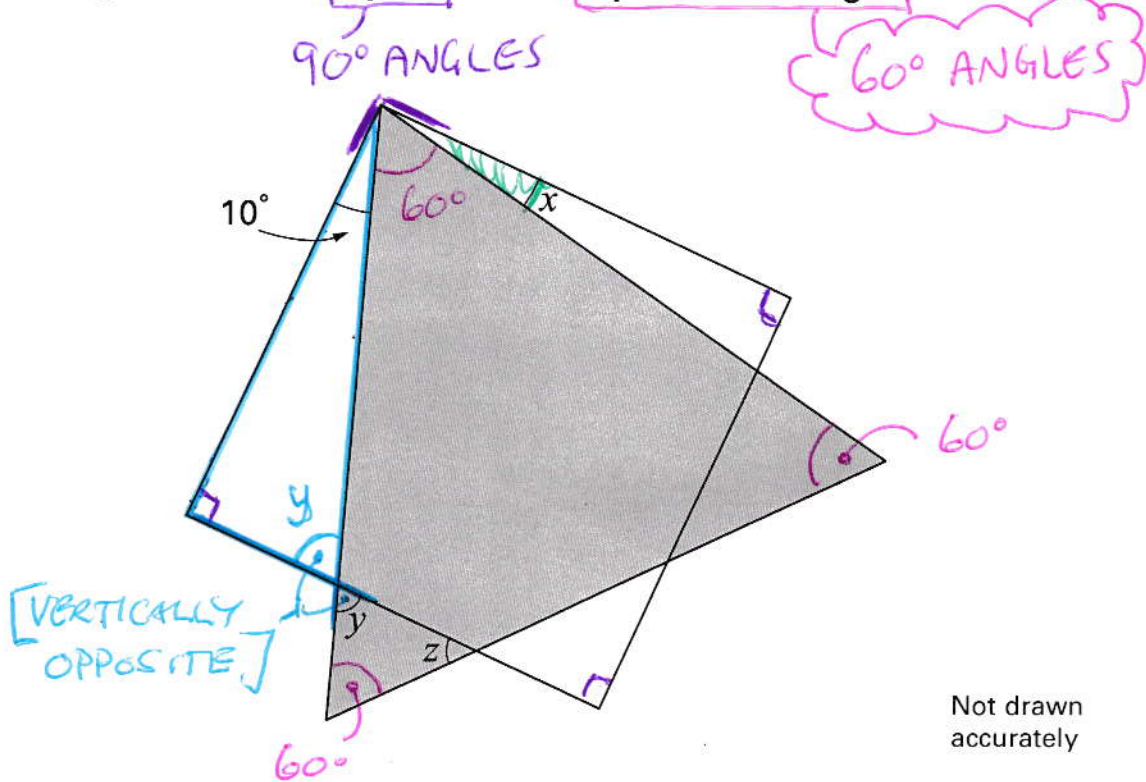
$$y = 180 - (125 + 30)$$

$$= 180 - 155$$

[2 marks]

The diagram shows a **square** and an **equilateral triangle**.

[Extra]



Calculate the sizes of angles x , y and z

$$\begin{aligned} \text{[1ST]} \quad x &= 90 - (10 + 60) \\ &= \underline{\underline{20^\circ}} \end{aligned}$$

$$\begin{aligned} \text{[2ND]} \quad y &= 180 - (90 + 10) \\ &= \underline{\underline{80^\circ}} \end{aligned}$$

$$\begin{aligned} \text{[3RD]} \quad z &= 180 - (60 + 80) \\ &= \underline{\underline{40^\circ}} \end{aligned}$$

$$x = \dots 20^\circ \quad y = \dots 80^\circ \quad z = \dots 40^\circ$$

[3 marks]