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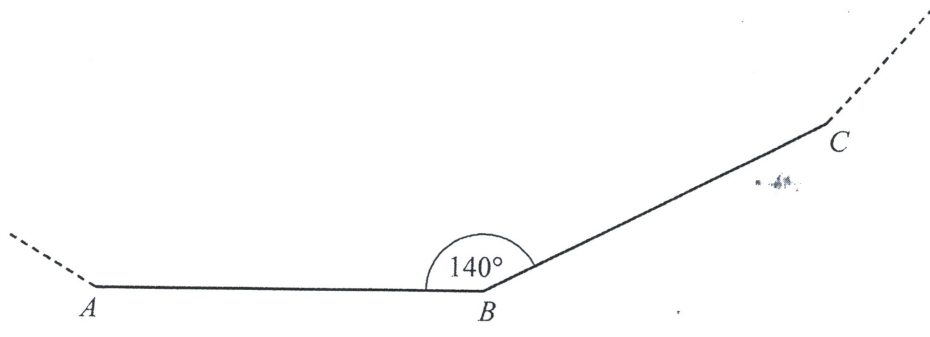
MATHEMATICS -CORE

TOPIC- Polygons

1

11-N-14

NOT TO
SCALE



The diagram shows two sides, AB and BC , of a regular polygon.
Angle $ABC = 140^\circ$.

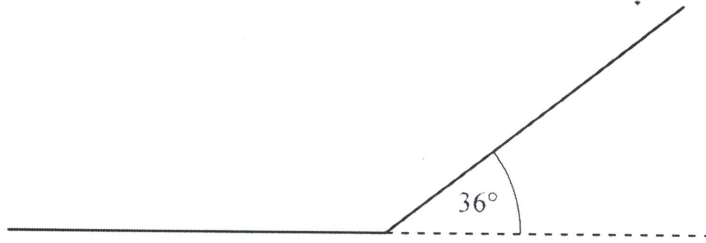
Find the number of sides of this regular polygon.

Answer [3]



2 (a)

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The diagram shows 2 sides of a regular polygon with exterior angle 36° .

For this regular polygon, work out

(i) the number of sides,

..... [2]

(ii) the interior angle,

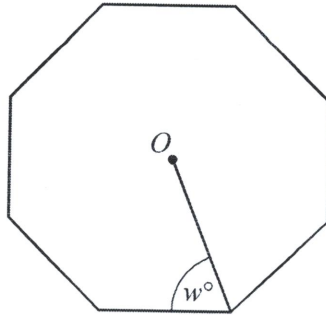
..... [1]

(iii) the sum of the interior angles.

..... [1]



(b) The diagram shows a regular polygon, centre O .



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For Examiner's Use

(i) Write down the name of this polygon.

Answer(b)(i) [1]

(ii) Find the value of w .
Show all your working.

Answer(b)(ii) $w =$ [3]

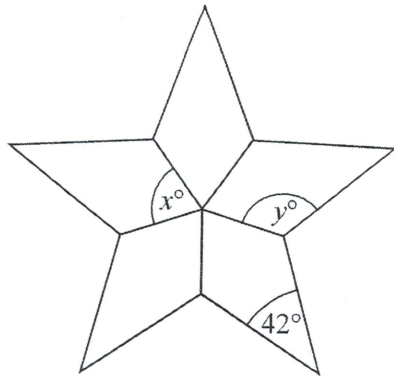
(c) The exterior angle of another regular polygon is 24° .

Calculate the number of sides this polygon has.

Answer(c) [2]

13/1/16

03



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The diagram is made from 5 congruent kites.

Work out the value of

(a) x ,

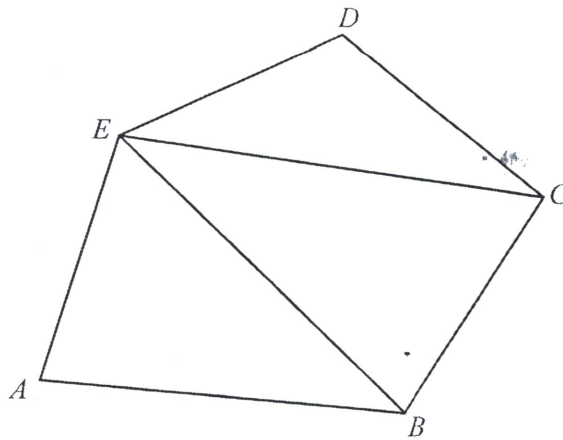
$x = \dots\dots\dots$ [1]

(b) y .

$y = \dots\dots\dots$ [2]



04 (a)



$ABCDE$ is a pentagon.

Explain why the diagram shows that the sum of the interior angles of a pentagon is 540° .
Do not measure any angles.

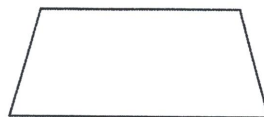
Answer(a) [1]

- (b) Two interior angles of a pentagon are 79° and 53° .
The other three angles are in the ratio $1:3:4$.

Calculate the size of each of these three angles.

Answer(b) [4]

8 (c)



Mark an obtuse angle on this trapezium.

[1]

- (d) A regular polygon has an exterior angle of 22.5° .

Work out how many sides this polygon has.

..... [2]

12-3-13

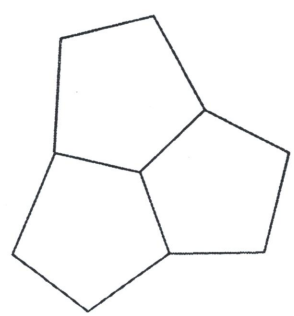
05. The exterior angle of a regular pentagon is 72° .

For
Examiner's
Use

(a) Write down the interior angle of a regular pentagon.

Answer(a) [1]

(b)



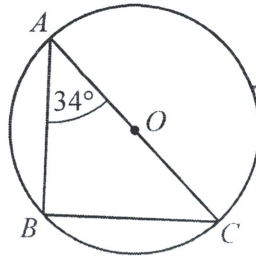
The diagram shows three pentagons which fit together.
Uta thinks that three **regular** pentagons will fit together in the same way.

Explain how you know she is wrong.

Answer(b)

..... [1]





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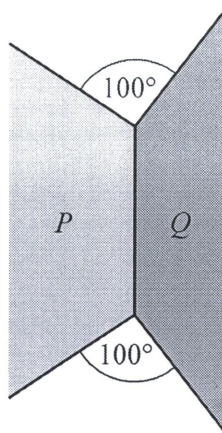


AC is a diameter of the circle, centre O .

Calculate angle ACB .

Answer(d) Angle $ACB = \dots\dots\dots$ [2]

- (e) The diagram below shows parts of shape P and shape Q .
 Shape P is a regular hexagon and shape Q is another regular polygon.
 The two shapes have one side in common.



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Find the number of sides in shape Q .
 Show each step of your working.

Answer(e) $\dots\dots\dots$ [5]