Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Angles in Polygons 2

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

1)

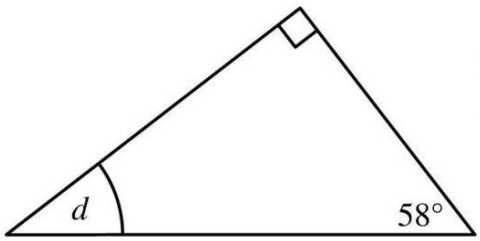

Diagram not drawn accurately

Calculate the angle d

Answer _____ ° [2]

2) Find the size of angle x. [2]

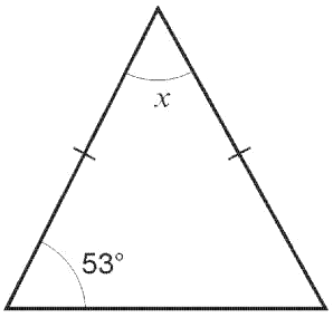

Diagram not drawn to scale

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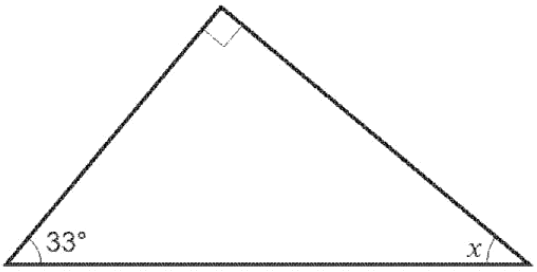
x = ... °

3) *(a)* Calculate the size of angle x. [2]



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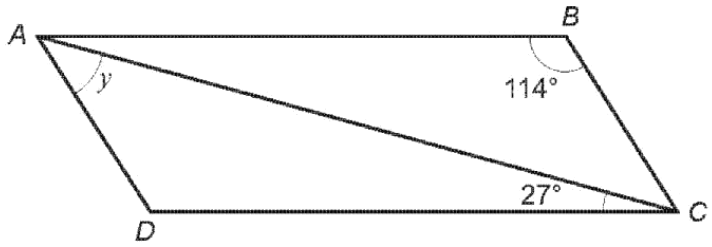
$x =$ ..... °

(b) *ABCD* is a parallelogram. Calculate the size of angle y. [3]



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$y =$ ..... °

4)

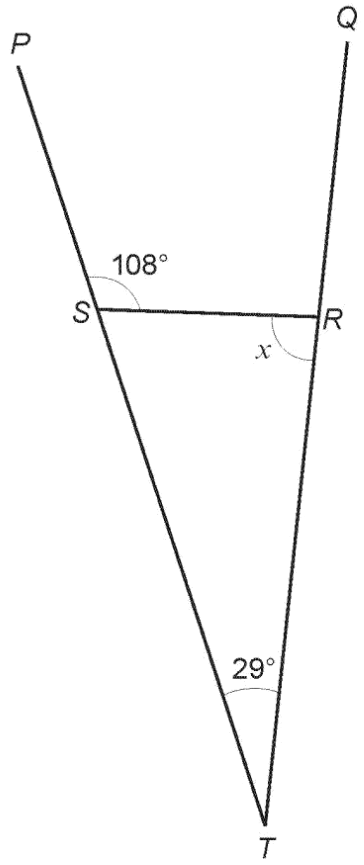

Diagram not drawn to scale

PST and *QRT* are straight lines.
Calculate the size of angle x.
You must show all your working. [3]

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5)

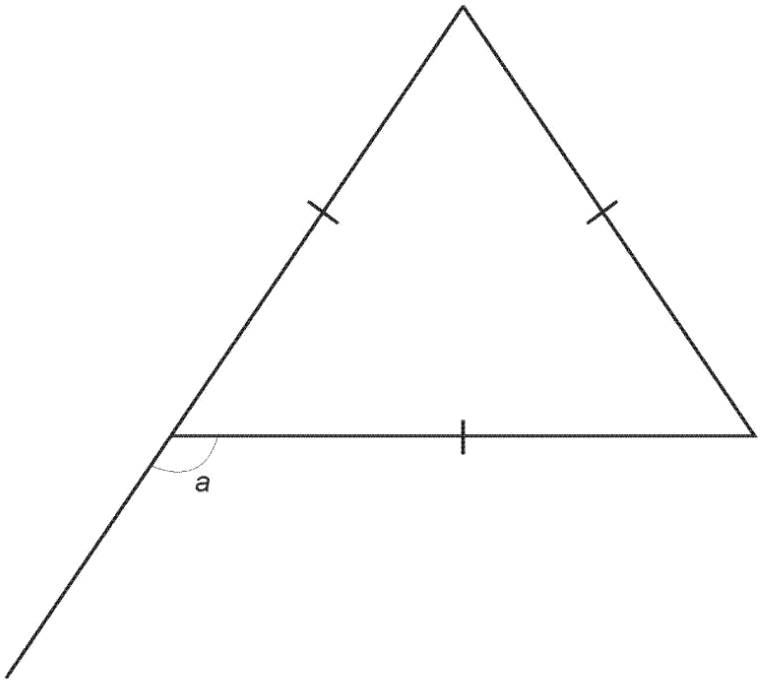

Diagram not drawn to scale

Find the size of angle *a*. [3]

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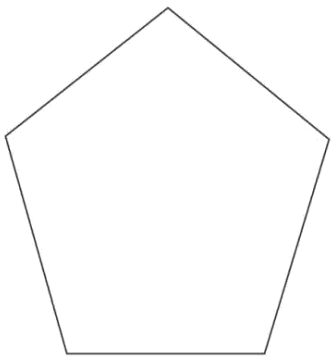
6)



Explain why the sum of the interior angles in a regular pentagon is 540°.

[2]

7) The diagram shows a regular hexagon *ABCDEF*.

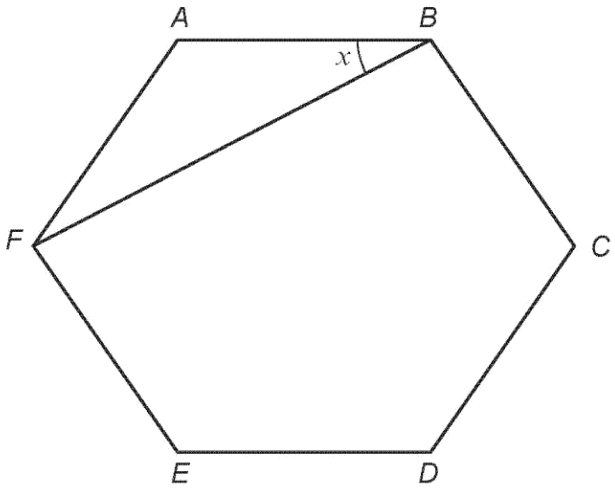


Diagram not drawn to scale

Calculate the size of angle x.
You **must** show all your working to support your answer. [3]

x = ... °

8) The diagram below shows part of a regular polygon.
Calculate the number of sides of this regular polygon. [2]

Diagram not drawn to scale

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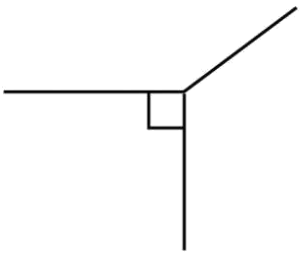
9) Two identical regular polygons join with a square to form a tiling pattern.



Explain why these polygons must be regular octagons.

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_____ [3]

10)

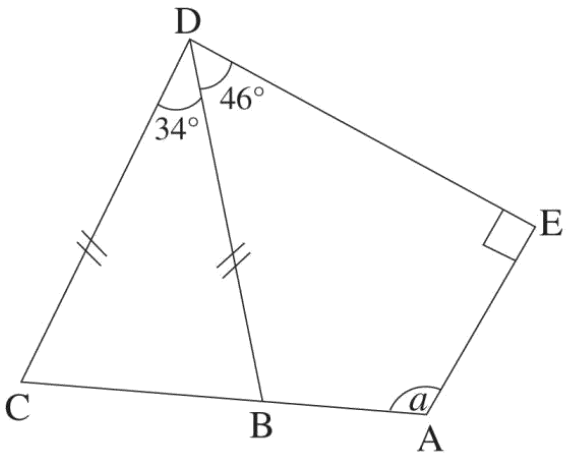

Diagram not drawn accurately

Triangle DCB is isosceles and angle DEA is a right angle.
Calculate the size of the angle a.

Answer a = _____° [4]

11) The interior angle of a regular polygon is 135°

How many sides has the polygon?
Show your working.

Answer _____ [2]

12)

(a) In the diagram, *PS*, *QT* and *RU* are straight lines.
Find the size of angle x. [2]

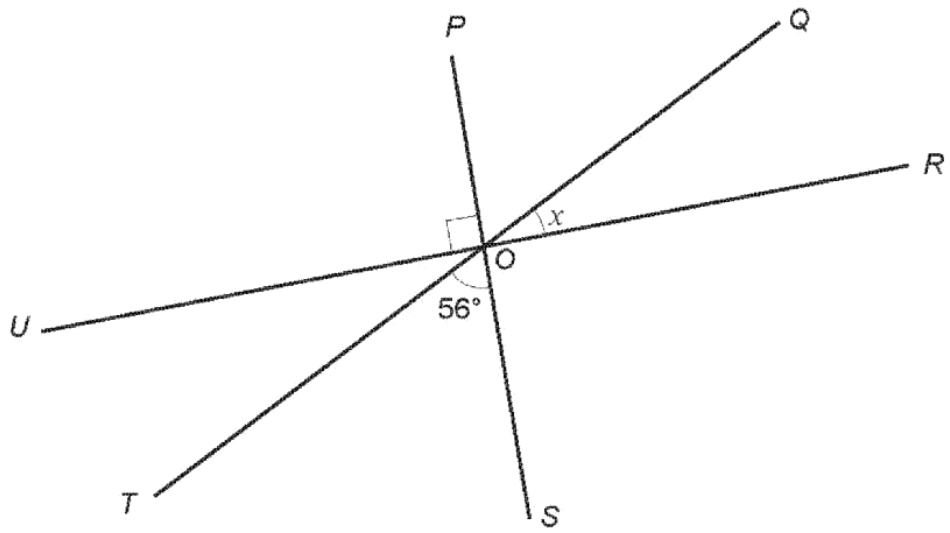

Diagram not drawn to scale

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x = ... °

(b) *ABCD* is a rhombus. Find the size of angle y. [3]

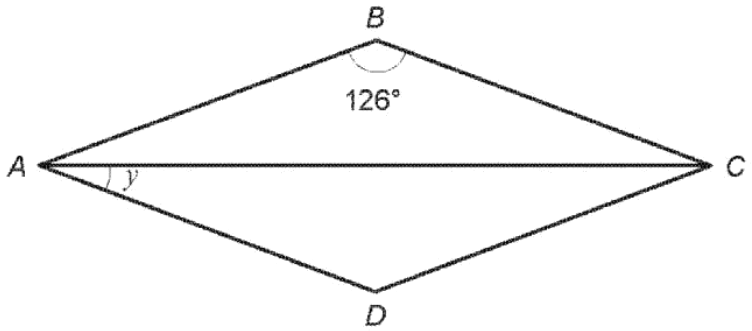

Diagram not drawn to scale

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y = ... °

13) Calculate the size of each interior angle in a regular nonagon (nine-sided polygon).

Answer _____° [2]

14)

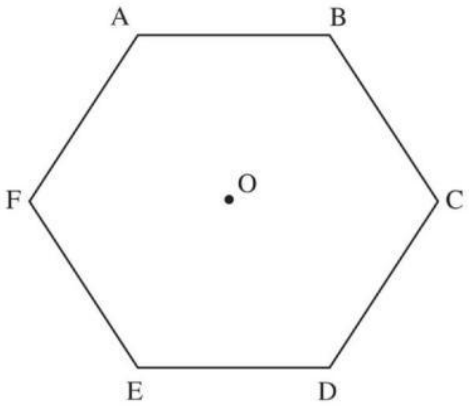

Diagram not drawn accurately

ABCDEF is a regular hexagon with centre O.

(a) Calculate the size of the angle AOB.

Answer _____° [1]

(b) Explain why the interior angle of a regular hexagon is 120°.

Answer _____

_____ [2]

(c) Calculate the size of the angle AEF.

Answer _____° [1]

15)
All the angles in this triangle are measured in degrees.
Calculate the size of the **smallest** angle.
You must show clearly how you identify the smallest angle. [5]

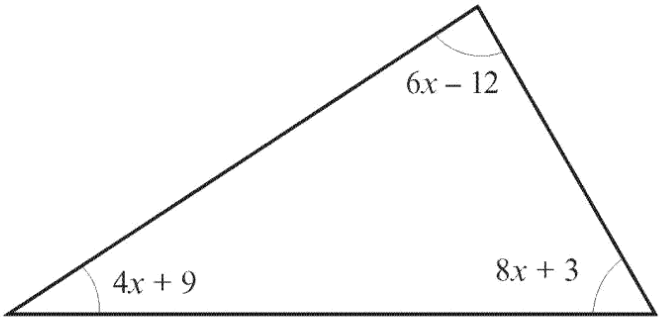

Diagram not drawn to scale

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Size of smallest angle = ...

16)

$ABCD$ is a square.
Triangle DEF is equilateral.
Triangle AFD is isosceles with $AF = AD$.
EDC is a straight line.

Showing all your steps, calculate the size of $A\hat{F}E$.

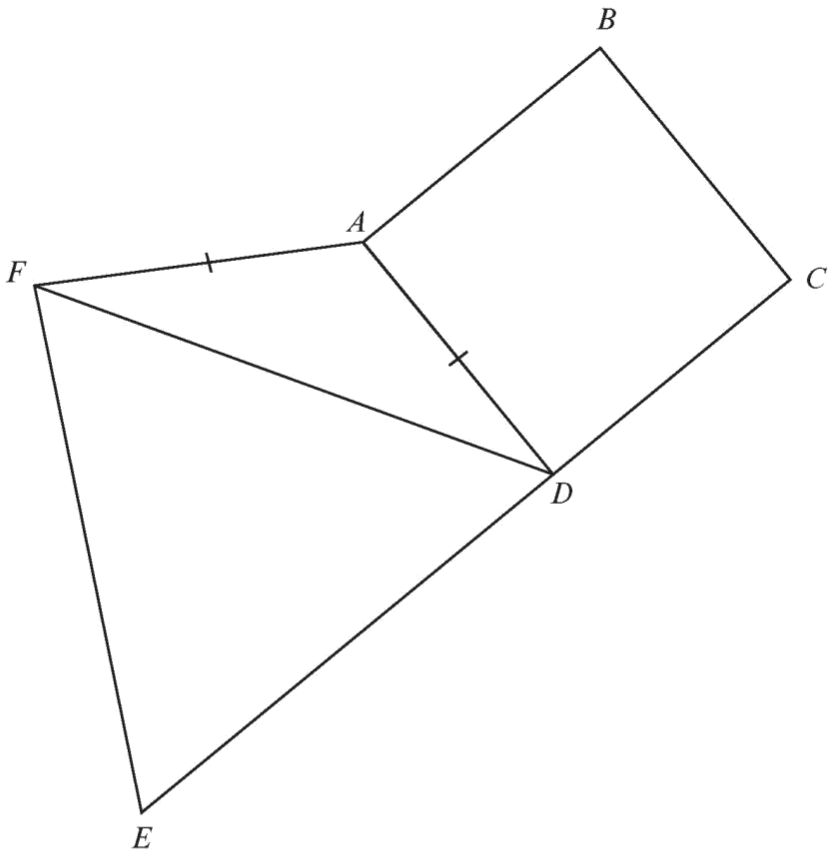

Diagram not drawn to scale

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[5]