
IGCSE MATHEMATICS
ANGLES AND POLYGONS

NAME _____

Question 1

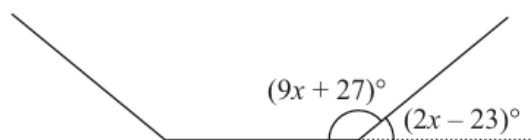


Diagram **NOT**
accurately drawn

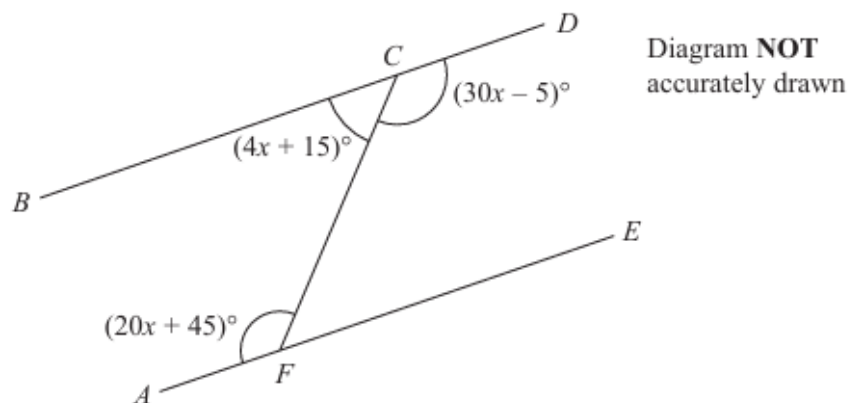
The diagram shows part of a regular n -sided polygon with

- an interior angle of $(9x + 27)^\circ$
- an exterior angle of $(2x - 23)^\circ$

Work out the value of n

$n =$

(4)

Question 2

BCD and AFE are straight lines.

Show that BCD is parallel to AFE .

Give reasons for your working.

(5)

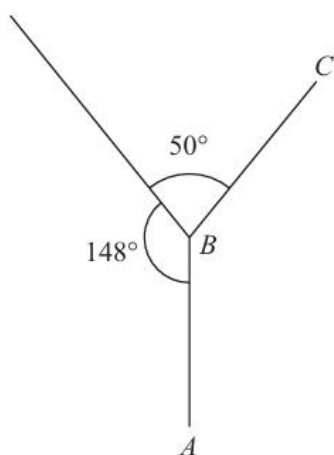
Question 3

Diagram **NOT**
accurately drawn

AB and BC are two sides of a regular polygon with n sides.

Work out the value of n
Show your working clearly.

.....(4)

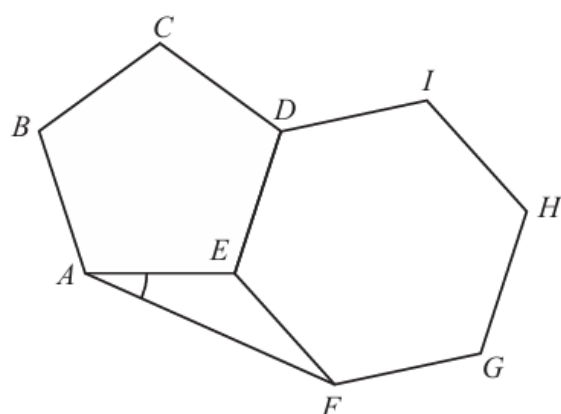
Question 4

Diagram **NOT**
accurately drawn

$ABCDE$ is a regular pentagon.
 $DEFGHI$ is a regular hexagon.

AF is a straight line.

Work out the size of angle EAF

.....(5)

Question 5

In the diagram, $ABCDE$ is a regular pentagon.

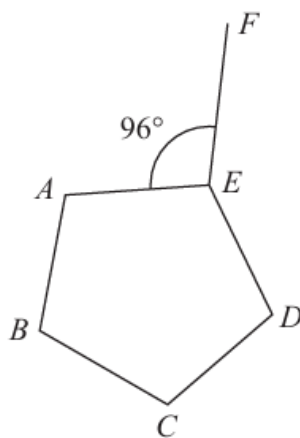


Diagram **NOT**
accurately drawn

Angle $AEF = 96^\circ$

Work out the size of the obtuse angle FED
Show your working clearly.

.....(4)

Question 6

$ABCD$ is a trapezium.

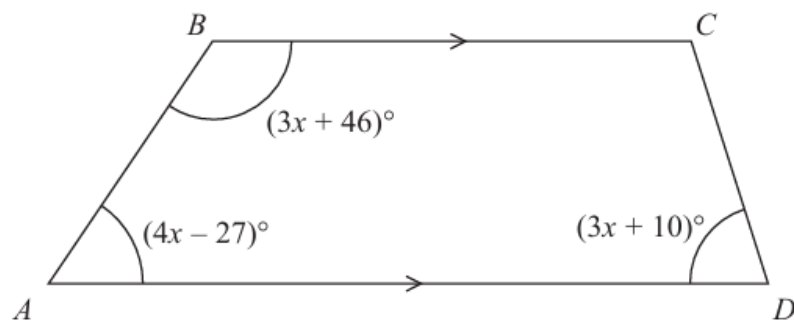


Diagram **NOT**
accurately drawn

BC is parallel to AD

Find the size of the largest angle inside the trapezium.

.....(4)

Question 7

Here is a 9-sided regular polygon $ABCDEFGHIJ$, with centre O

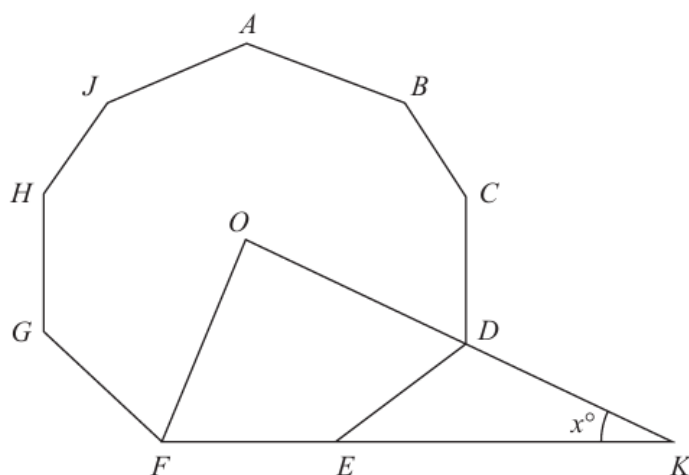


Diagram **NOT**
accurately drawn

ODK and FEK are straight lines.

Work out the value of x

.....(3)

Question 8

The diagram shows a pentagon.

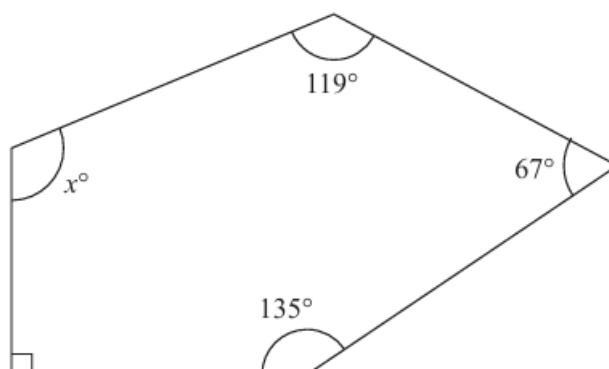


Diagram **NOT**
accurately drawn

Work out the value of x

$x = \dots\dots\dots$ (3)

Question 9

The diagram shows parts of three regular polygons, **A**, **B** and **C**, meeting at a point.

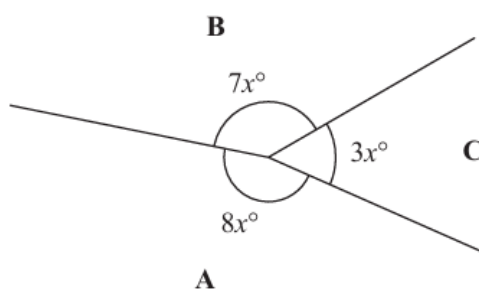


Diagram **NOT**
accurately drawn

Polygon **B** has n sides.

Work out the value of n .

(4)

Question 10

The diagram shows a regular octagon $ABCDHIJK$ and a pentagon $DEFGH$.

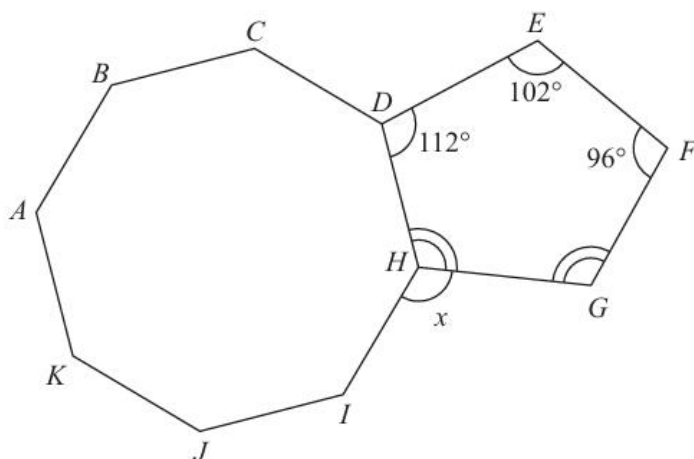


Diagram **NOT**
accurately drawn

Angle $GHD = \text{angle } FGH$.

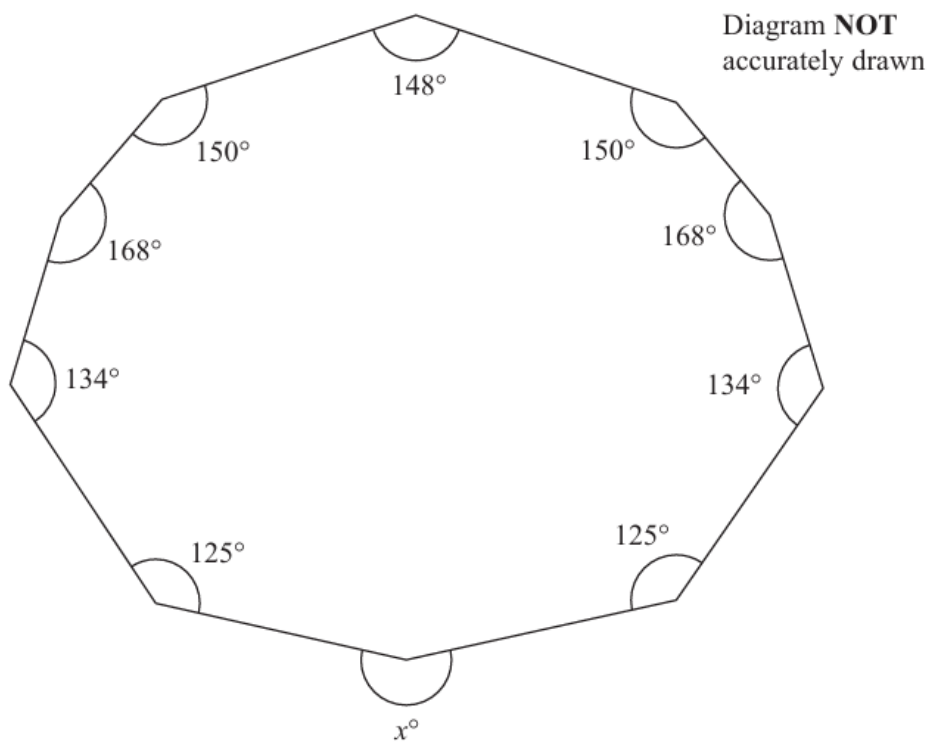
Work out the size of the angle marked x .

Show your working clearly.

.....(5)

Question 11

Here is a 10-sided polygon.



Work out the value of x .

.....(4)

Question 12

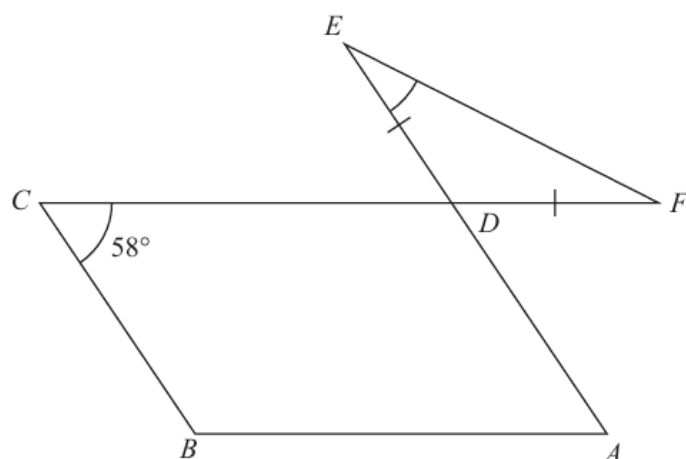


Diagram **NOT**
accurately drawn

The diagram shows a parallelogram $ABCD$ and an isosceles triangle DEF in which $DE = DF$

CDF and ADE are straight lines.

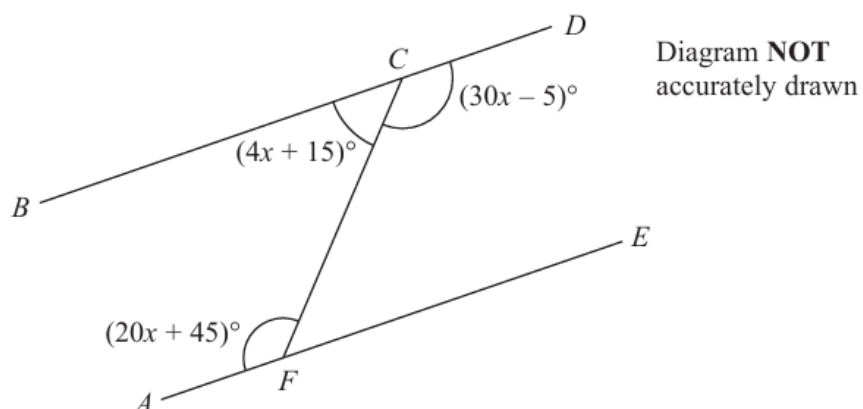
Angle $BCD = 58^\circ$

Work out the size of angle DEF .

Give a reason for each stage of your working.

.....(5)

Question 13



BCD and AFE are straight lines.

Show that BCD is parallel to AFE .

Give reasons for your working.

.....(5)