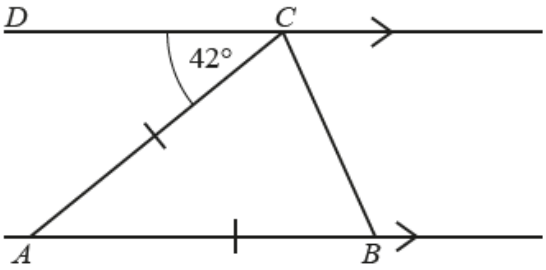
5.4 – Angles

Student name: Answers Score: _____

1.



NOT TO SCALE

In the diagram, DC is parallel to AB and $AC = AB$.

Work out angle ACB.

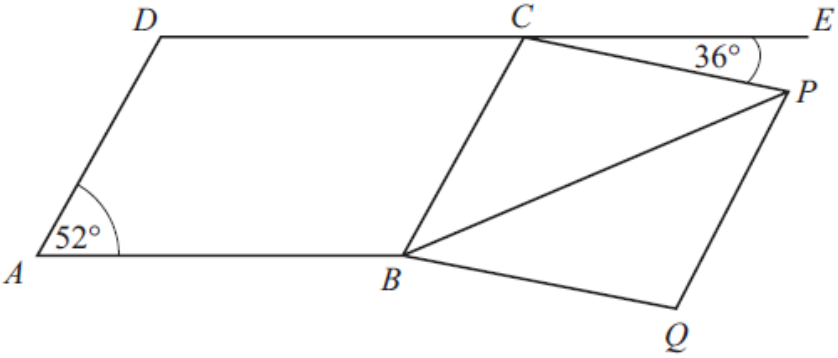
Angle ACB = 69° [2]

2. The size of one interior angle of a regular polygon is 156°.

Find the number of sides of the polygon.

Answer 15 [2]

3.



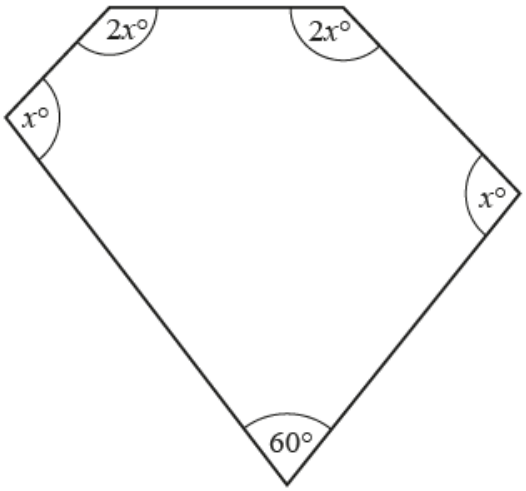
NOT TO SCALE

$ABCD$ is a parallelogram and $BQPC$ is a rhombus.
DCE is a straight line.
Angle $DAB = 52°$ and angle $ECP = 36°$.

Find the size of angle BPC.

Answer 44° [3]

4.



NOT TO SCALE

The diagram shows a pentagon.

Find the value of x.

$x =$ 80° ..... [3]

5. **(a)** A regular polygon has 12 sides.

Work out the sum of the interior angles of the polygon. 1800°

[2]

(b) The interior angle of a regular polygon is 165°.

Find the number of sides of this polygon. 24

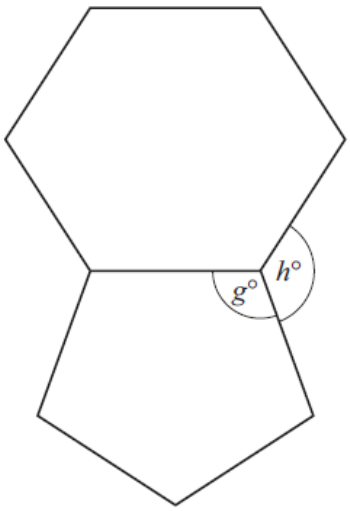
[2]

6. The interior angle of a regular polygon is 176°.

Work out how many sides the polygon has. 90

[3]

7.



NOT TO SCALE

The diagram shows a regular hexagon and a regular pentagon.

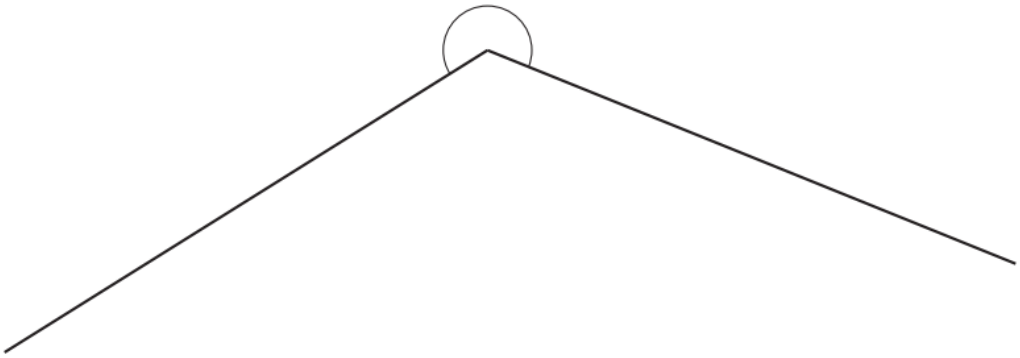
(a) Find g. 108°

[3]

(b) Find h. 132°

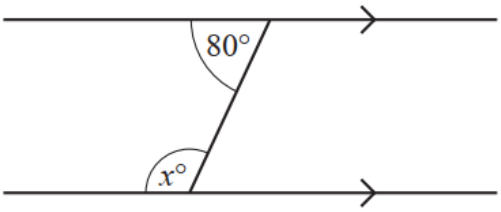
[2]

8. **(a)** Find, by measuring, the size of this reflex angle.



235° **[1]**

(b)

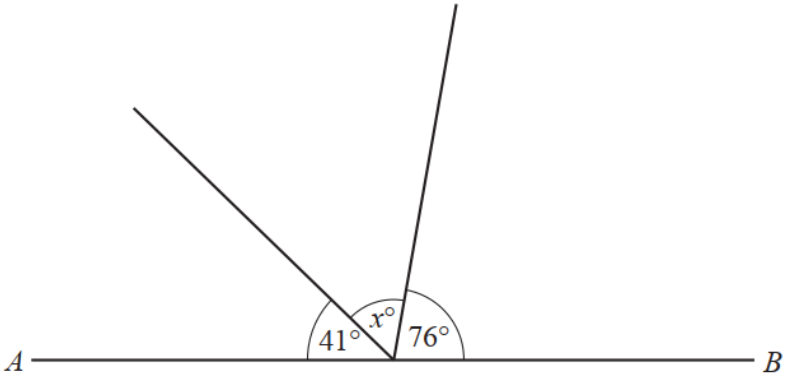


NOT TO SCALE

Work out the value of x. 100° [1]

(c) Find the size of one exterior angle of a regular 18-sided polygon. 20° [2]

9.

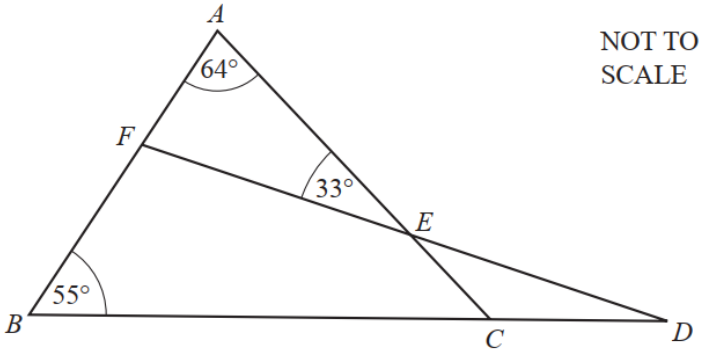


NOT TO SCALE

AB is a straight line.

Find the value of x. 63° [1]

10.

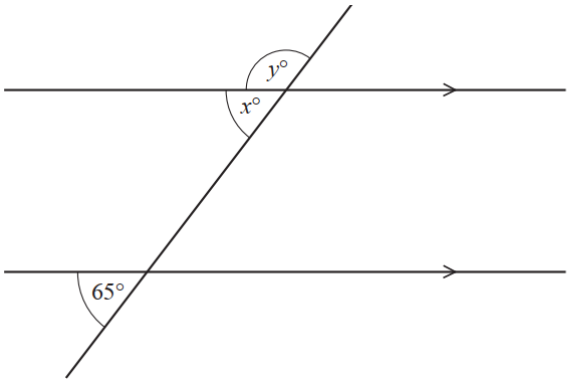


NOT TO SCALE

ABC is a triangle.
FED and BCD are straight lines.
Work out angle EDC.

Angle EDC = ... 28° ..... [2]

11.



NOT TO SCALE

Find the value of x and the value of y.

$x =$ 65° .....

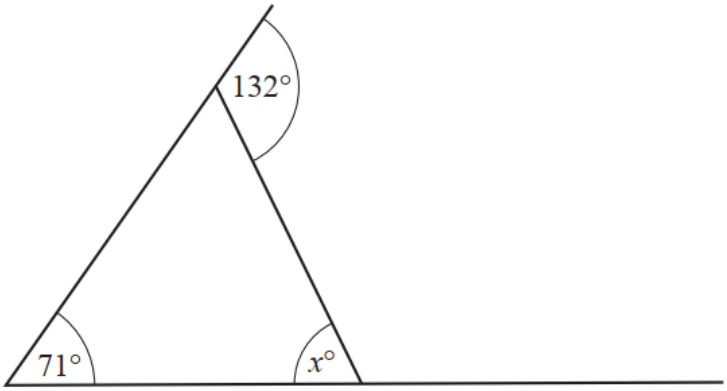
$y =$ 115° ..... [2]

12. A regular polygon has 40 sides.

Find the size of one exterior angle.

9° ..... [2]

13.

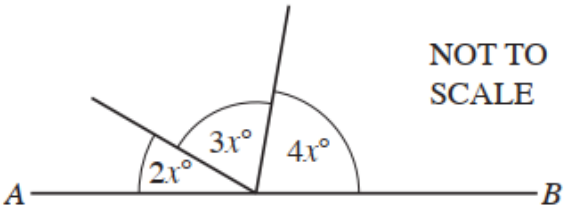


NOT TO SCALE

Find the value of x.

$x =$ 61° ..... [2]

14.



NOT TO SCALE

AB is a straight line.

Find the value of x.

$x =$ 20 ..... [2]

15. The interior angle of a regular polygon is 150°.

Find the number of sides of this polygon.

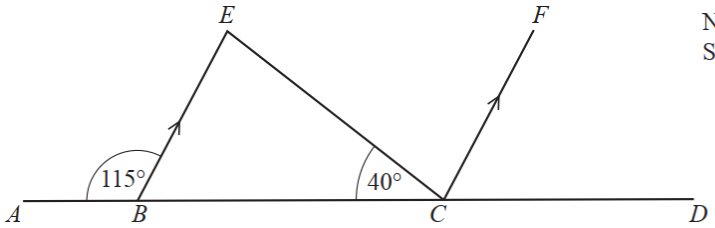
12 ..... [3]

16. A regular polygon has 30 sides.

Find the size of one exterior angle.

12 [2]

17.



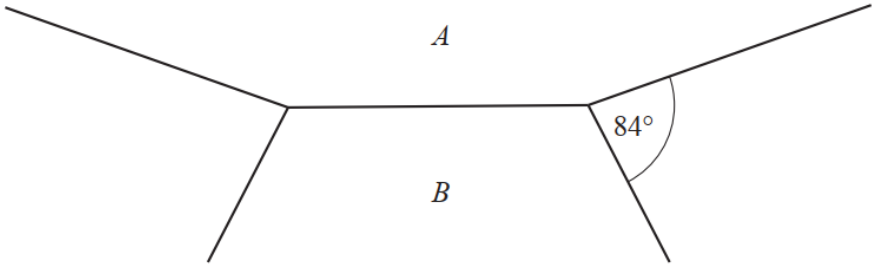
NOT TO SCALE

ABCD is a straight line and *BE* is parallel to *CF*.

Find angle *ECF*.

Angle *ECF* = 75° [2]

18.



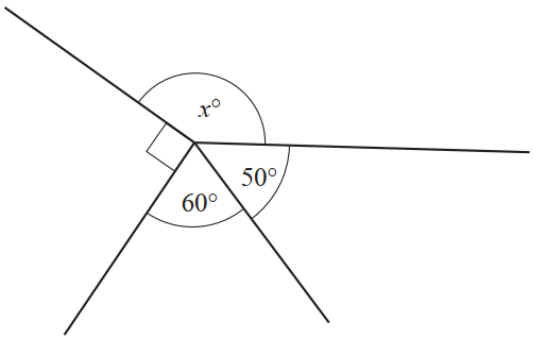
NOT TO SCALE

The diagram shows part of polygon *A* and part of polygon *B*.
A is a regular polygon with *n* sides.
B is a regular hexagon.

Find the value of *n*.

n = 15 [3]

19.



NOT TO SCALE

Find the value of *x*.

x = 160° [1]

20. Find the size of one interior angle of a regular polygon with 20 sides.

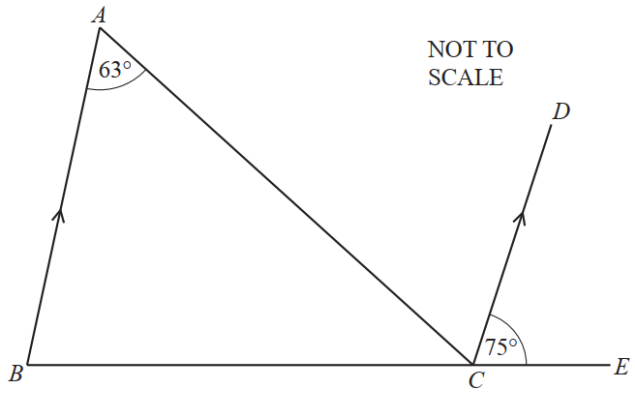
162° [3]

21. Triangle *ABC* is isosceles and angle *A* = 40°.

Find the three possible values for angle *B*.

40° , 70° , 100° [2]

22.



AB is parallel to *CD*.

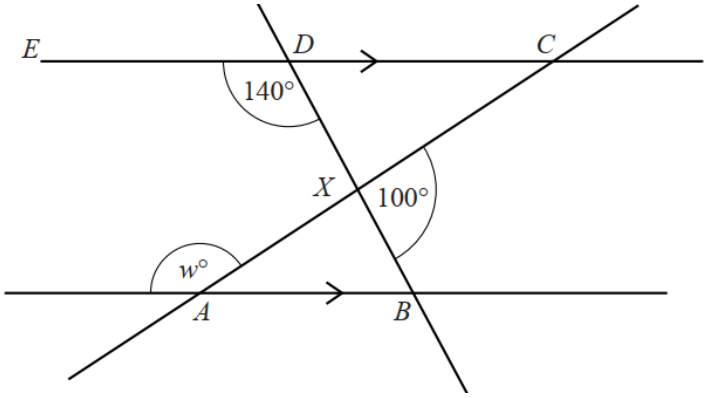
Find angle *ACD*.

Angle *ACD* = 63° [1]

23. Find the exterior angle of a regular polygon with 15 sides.

24° [2]

24.



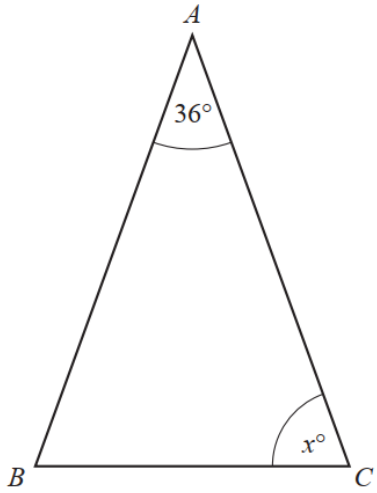
NOT TO
SCALE

The diagram shows two parallel lines with two straight lines crossing.

Find the value of *w*.

w = 120° [2]

25.



NOT TO
SCALE

AB = *AC*.

Find the value of *x*.

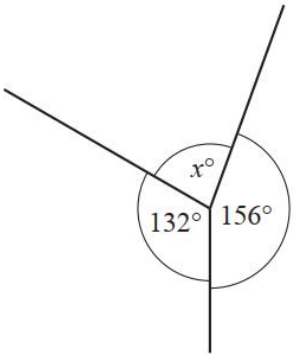
x = 72° [2]

26. The interior angle of a regular polygon is 160°.

Find the number of sides of this polygon.

18 ..... [3]

27.

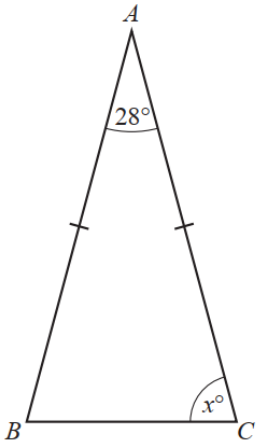


NOT TO SCALE

Find the value of x.

$x =$ 72° ..... [1]

28.



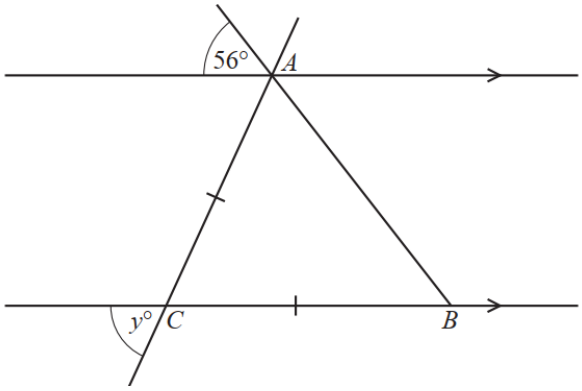
NOT TO SCALE

$AB = AC$

Find the value of x.

$x =$ 76° ..... [2]

29.



NOT TO SCALE

In the diagram, A, B and C are points on parallel lines.
$AC = BC$.

Work out the value of y.

$y =$ 68° ..... [3]

30. Find the size of one exterior angle of a regular octagon.

45° ..... [2]

31. Each interior angle of a regular polygon is 170°.

Find the number of sides of this polygon.

36 ..... [3]

32. (a) A regular polygon has 12 sides.

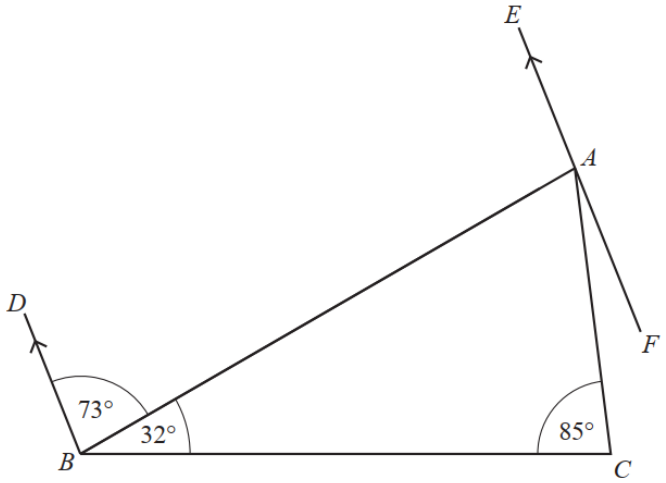
Work out the sum of the interior angles of the polygon.

1800 ..... [2]

(b) The interior angle of a regular polygon is $x°$.

Find an expression, in terms of x, for the number of sides of this polygon. $\frac{360}{180 - x}$ ..... [2]

33.



NOT TO SCALE

BD is parallel to *FAE*.

(a) Find angle *BAE*.

Angle *BAE* = 107° ..... [1]

(b) Find angle *FAC*.

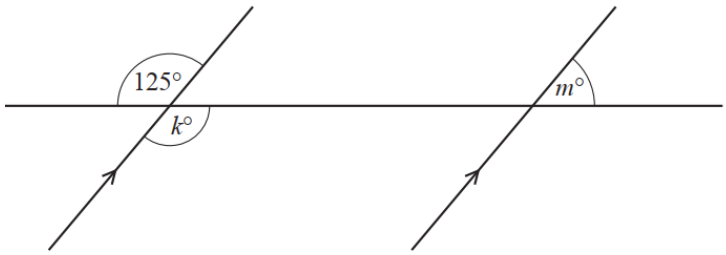
Angle *FAC* = 10° ..... [2]

34. A regular polygon has 24 sides.

Find the size of each interior angle of the polygon.

165° ..... [3]

35.



NOT TO SCALE

The diagram shows a straight line intersecting two parallel lines.

Find the value of k and the value of m.

k = 125° .....

m = 55° ..... [2]