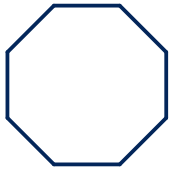
GCSE HIGHER · REVISION MAT 3

Angles and polygons

1 Find x. Give a reason.

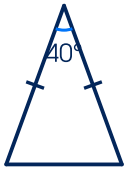


2 Find the sum of the interior angles of an octagon.

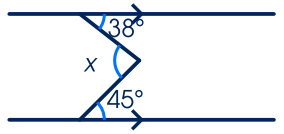


3 An isosceles triangle has an angle of 40° between its equal sides.

Show that the other two angles are each 70°.



4 Find x.



5 Explain why the exterior angles of any convex polygon add up to 360°.

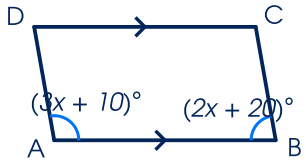
6 Each interior angle of a regular polygon is 156°.

How many sides does it have?

7 ABCD is a parallelogram.

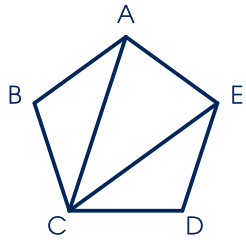
Angle A = $(3x + 10)°$ and angle B = $(2x + 20)°$.

Show that $x = 30$.



8 ABCDE is a regular pentagon.

Find angle ACE.



ANSWERS · REVISION MAT 3

Angles and polygons

1 **$x = 47°$**
(vertically opposite angles are equal)

2 6×180
1080°

3 $180 - 40 = 140$
$140 \div 2 = 70°$

4 Draw a parallel line through the corner.
$x = 38 + 45 = 83°$

5 **Walking round the shape you turn through each exterior angle and make one full turn.**

6 Exterior 24°
15 sides

7 Co-interior: $5x + 30 = 180$
$x = 30$

8 Interior angle 108°
Triangle ABC isosceles:
angle BCA = 36°
Similarly angle ECD = 36°
Angle ACE = 108 – 72 = 36°