

Exterior and Interior Angles Past paper questions Edexcel GCSE

Answers - None Calculator

1.

360 ÷ 10 36 ÷ 2	18°	4	M1 for correct method to find the size of an exterior angle eg 360 ÷ 10 A1 for 36 M1 for '36' ÷ 2 or (180 - (180 - 36)) ÷ 2 A1 cao OR M1 for correct method to find the size of an interior angle eg (180 × 8) ÷ 10 A1 144 M1 (180 - '144') ÷ 2 A1 cao
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2.

Question	Working	Answer	Mark	Notes
		36	4	M1 for 360 ÷ 5 (=72) or (2×5 - 4)×90 (=540) or (5-2)×180 (=540) M1(dep) for 180 - "72" (=108) or 540 ÷ 5 (=108) (could be marked on the diagram) M1 for complete method to find angle <i>HAB</i> (360 - 2 × "108") ÷ 2 oe or angle <i>EAH</i> + angle <i>HCD</i> 540 - ("108" + "108" + (360 - "108")) oe or angle <i>EAF</i> 720 - ("108" × 4) ÷ 2 oe A1 cao

3.

Question	Working	Answer	Mark	Notes
		27	4	M1 for 360÷5 (=72) or 360÷8 (=45) M1 for '72' - '45' A1 for x = 27 C1 (dep on M1) for sum of <u>exterior angles</u> of <u>polygon</u> is <u>360</u> degrees oe OR M1 for 3×180÷5 (=108) or 6×180÷8 (=135) M1 for '135' - '108' A1 for x = 27 C1 (dep on M1) for sum of <u>interior angles</u> of <u>polygon</u> is <u>180(n - 2)</u> oe degrees or <u>angles in a triangle</u> sum to <u>180</u> degrees OR M1 for 360÷8 (=45) or 3×180÷5 (=108) M1 for 180 - ('108'+ '45') A1 for x = 27 C1 (dep on M1) for sum of <u>exterior angles</u> of <u>polygon</u> is <u>360</u> degrees oe and <u>angles on a straight line</u> sum to <u>180</u> degrees

4.

(i)	180° - 160° =	20	3	B1 cao
(ii)	Exterior angles sum to 360° So 360 ÷ '20' =	18		M1 for 360 ÷ "20" A1 cao

5.

		48	4	<p>M1 for $360 \div 5 (=72)$ M1 for $180 - '72' (= 108)$ M1 (dep M2) for $'108' - 60$ A1 cao</p> <p>OR</p> <p>M1 for $(5 - 2) \times 180 (=540)$ M1 for $'540' \div 5 (= 108)$ M1 (dep M2) for $'108' - 60$ A1 cao</p>
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6.

	$180 - 140 (= 40)$ $360 \div '40'$	9	3	<p>M1 for $180 - 140 (= 40)$ M1 (dep) for $360 \div '40'$ A1 cao</p>
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7.

Question	Working	Answer	Mark	Notes
		$112 \frac{1}{2}$	4	<p>M1 for exterior angle = $360 \div 8 (=45)$ M1 for interior angle = $180 - '45' (=135)$ M1 (dep on at least M1) for $\frac{1}{2}(360 - '135')$ or $180 - \frac{1}{2}('135')$ A1 for $112 \frac{1}{2}$ oe OR M1 for $360 \div 8 (=45)$ M1 for $180 + '45' (=225)$ or $180 - '45'$ M1 (dep on at least M1) for $'225' \div 2$ or for $\frac{1}{2}(360 - '135')$ or $180 - \frac{1}{2}('135')$ A1 for $112 \frac{1}{2}$ oe OR M1 for Sum of interior angles = $180 \times (8-2) (=1080)$ M1 for interior angle = $'1080' \div 8 (=135)$ M1 (dep on at least M1) for $\frac{1}{2}(360 - '135')$ or $180 - \frac{1}{2}('135')$ A1 for 112.5 oe NB do not award marks for angles that are stated in working but contradicted by their position on the diagram.</p>

8.

Question	Working	Answer	Mark	Notes
		126	3	<p>M1 for (angle $BCD = \frac{180 \times (10 - 2)}{10} (= 144)$ M1 (dep) for (angle $DCX = 360 - '144' - 90$ oe A1 cao</p> <p>OR</p> <p>M1 for (exterior angle = $\frac{360}{10} (= 36)$ M1 (dep) for (angle $DCX = 90 + '36'$ oe, eg $180 - (90 - 36)$ A1 cao</p>

9.

<p>Angle PQR = angle QRS = $\frac{(10 - 2) \times 180}{10} = 144^\circ$ (interior angle of an n-sided polygon) Angle QPR = angle QRP = $\frac{180 - 144}{2} = 18^\circ$ (base angles of isos triangle) Angle PRS = $144 - 18 = 126^\circ$ $x = 180 - 126 = 54^\circ$ (angles on a straight line)</p>	<p>54°</p>	<p>5</p>	<p>M1 for $\frac{(10 - 2) \times 180}{10}$ oe A1 for interior angle = 144 M1 for $\frac{180 - 144}{2}$ or 18° seen M1 (dep) for "180 - ('144' - '18')" A1 cao</p>
			<p>Total for Question: 5 marks</p>