22	Ext angle of octagon = 360 ÷ 8 (= 45) **or** Int angle of octagon (8 – 2) × 180 ÷ 8 oe (= 135)		6	M1	for method to find the size of one exterior **or** one interior angle of a regular octagon
	e.g. 10 + 2 × 10 × sin45 (= $10+10\sqrt{2}$ or 24.1...) **or** e.g. $\frac{10\sin 112.5}{\sin 22.5}$ (= 24.1…)			M1	method to find *HE* **or** *AD* 22.5 comes from (180 – "135") ÷ 2 112.5 comes from "135" – "22.5"
	e.g. 10 × ("$10+10\sqrt{2}$") (= 100 + $100\sqrt{2}$ or 241.4...) **or** 10 × "24.1…" (= 241.4…)			M1	area *ADEH*
	e.g. 10 × sin45° (=5 $\sqrt{2}$ or 7.07...) **or** e.g. $\sqrt{10^2+10^2-2\times10\times10\times\cos"135"}$ (= 18.4…) **or** $\frac{10\sin"135"}{\sin 22.5}$ (= 18.4…)			M1	finds perpendicular height of triangle *ACD* (may be found before, but must realise this is also height of triangle) **or** finds the length of *AC* 22.5 comes from (180 – "135") ÷ 2
	e.g. 0.5 × "24.1..." × "7.07…" (= 85.3...) **or** $0.5\times10\times"18.4..."\times\sin112.5$ (= 85.3…)			M1	finds the area of triangle *ACD* 112.5 comes from "135" – "22.5"
		327		A1	accept 326 – 327
	Alternative (splitting octagon into triangles and subtracting trapezium and triangle)				
	Ext angle of octagon = 360 ÷ 8 (= 45) **or** Int angle of octagon (8 – 2) × 180 ÷ 8 oe (= 135) **or** one of 8 angles at centre = 360 ÷ 8 (= 45)		6	M1	for method to find the size of one exterior **or** one interior angle of a regular octagon **or** method to find one angle at centre of octagon when split into 8 equal triangles
	e.g. 0.5 × 10 × 5 × tan67.5 (= 60.35...) **or** $0.5\times\left(\frac{10\sin 67.5}{\sin 45}\right)^2\times\sin 45$(= 60.35...) **or** Octagon = 8 × "60.35" (= 482.8...)			M1	Area of one triangle (one-eighth of octagon) **or** octagon
	e.g. 10 + 2 × 10×sin45°(= $10+10\sqrt{2}$ =24.14..)			M1	Method to find *HE*
	0.5 × (10 + $10+10\sqrt{2}$)× $5\sqrt{2}$ (=120.71...)			M1	Method to find area of trapezium *HEGF*
	0.5 × 10 × 10 × sin135°(= 35.35...)			M1	Method to find area of triangle *ABC*
		327		A1	accept 326 – 327
					Total 6 marks