Q	Working	Answer	Mark	Notes
23	$[DN =]8\sin 30$ **or** $8\cos 60$ (= 4) oe [where N is the midpoint of EC] **or** $[x =]8\cos 30$ **or** $8\sin 60 (= 4\sqrt{3} = 6.928...)$ **or** $2x = \sqrt{8^2 + 8^2 - 2\times 8\times 8\times \cos 120} (= \sqrt{192} = 8\sqrt{3} = 13.85....)$		5	M1
	$[DN =]8\sin 30$ **or** $8\cos 60$ (= 4) oe eg $\sqrt{8^2 - (4\sqrt{3})^2} (= 4)$ **And 1 of** $[x =]8\cos 30$ **or** $8\sin 60 (= 4\sqrt{3} = 6.928...)$ oe or $\sqrt{8^2 - "4"^2} (= 4\sqrt{3} = 6.928...)$ **or** $2x = \sqrt{8^2 + 8^2 - 2\times 8\times 8\times \cos 120} (= 8\sqrt{3} = 13.85....)$			M1 [$(JM =)$ 4 + $4\sqrt{3}$ implies M2]
	$[AM =]\sqrt{12^2 + ("4\sqrt{3}")^2}$ (= $\sqrt{192}$ = $8\sqrt{3}$ = 13.856…) oe [where M is the midpoint of GH]			M1 **Clear intention to be *AM* (not *EC*)**
	$\tan MAJ = \left(\frac{"4" + "4\sqrt{3}"}{"8\sqrt{3}"}\right)$ oe eg $\tan MAJ = \left(\frac{10.928...}{13.856...}\right)$ if student uses sin or cos, then AJ = 17.647… to award marks this must come from a correct method or be correct			M1
	Correct answer scores full marks (unless from obvious incorrect working)	38.3		A1 Accept 38.1 – 38.4 If no marks scored then award SCB2 for $\tan MAJ = \frac{4 + x}{\sqrt{x^2 + 12^2}}$ or SCB1 for $AM = \sqrt{x^2 + 12^2}$
				Total 5 marks