

Q1. (2022)

Q	Answer	Mark	Comments
21	Alternative method 1		
	tan identified	M1	oe eg $\tan^{-1}$
	$\tan x = \frac{10}{4}$ or $\tan x = \frac{5}{2}$ or $\tan x = 2.5$	M1dep	oe eg $\tan^{-1} \frac{10}{4}$ or $90 - \tan^{-1} \frac{4}{10}$
	[68, 68.2]	A1	SC1 [21.8, 22]
	Alternative method 2		
	$\sin x = \frac{10}{\sqrt{4^2 + 10^2}}$ or $\cos x = \frac{4}{\sqrt{4^2 + 10^2}}$	M2	oe eg $\sin x = \frac{10}{\sqrt{116}}$ or $\sin^{-1} \frac{10}{\sqrt{4^2 + 10^2}}$ or $\cos x = \frac{4}{\sqrt{116}}$ or $\cos^{-1} \frac{4}{\sqrt{4^2 + 10^2}}$ or $90 - \sin^{-1} \frac{4}{\sqrt{4^2 + 10^2}}$ or $90 - \cos^{-1} \frac{10}{\sqrt{4^2 + 10^2}}$
	[68, 68.2]	A1	SC1 [21.8, 22]
	Additional Guidance		
	Accept 10.77 or 10.8 or $2\sqrt{29}$ for $\sqrt{116}$		
	Tan can be identified by, for example, circling TOA in SOHCAHTOA		
	Answer from accurate drawing		M0M0A0
	$\sin x = \frac{10 \sin 90}{\sqrt{116}}$		M2
	$(x =) \tan 2.5$ or $(x =) \tan 0.4$ or $(x =) \tan \left(\frac{10}{4}\right)^{-1}$ unless recovered		M1M0A0
	$\tan = \frac{10}{4}$ or $\tan = \frac{4}{10}$ or $\tan x = \frac{4}{10}$ with no further correct working		M1M0A0

Q2. (2023)

Q	Answer	Mark	Comments
23	Alternative method 1 – using tangent of an angle		
	tan chosen or used	M1	
	$\tan 58 = \frac{x}{46}$ or $46 \times \tan 58$ or $\tan 32 = \frac{46}{x}$ or $\frac{46}{\tan 32}$	M1dep	oe
	[73.6, 74]	A1	
	Alternative method 2 – finding hypotenuse first		
	$\frac{46}{\cos 58}$ or $\frac{46}{\sin 32}$ or 86.8(...) or 87	M1	oe
	$\sqrt{(\text{their } 86.8(\dots))^2 - 46^2}$ or $\sqrt{5418.(\dots)}$ or their 86.8(...) $\times \sin 58$ or their 86.8(...) $\times \cos 32$	M1dep	oe
	[73.6, 74]	A1	
	Additional Guidance		
	Do not accept scale drawing		
	Answer 73 after answer in range seen		M1M1A1
	$\frac{\sin 32}{46} = \frac{\sin 58}{x}$		M1