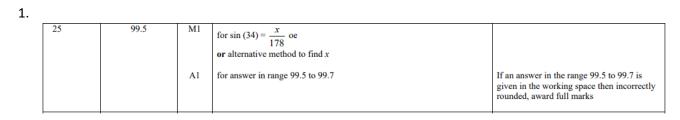
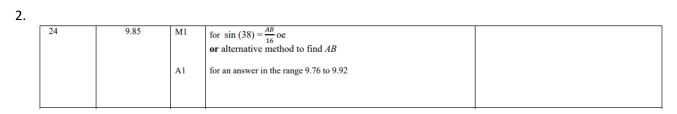
SOHCAHTOA (TRIGONOMETRY)

Pearson Edexcel - Thursday 4 June 2020 - Paper 2 (Calculator) Foundation Tier



Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Foundation Tier



Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Foundation Tier

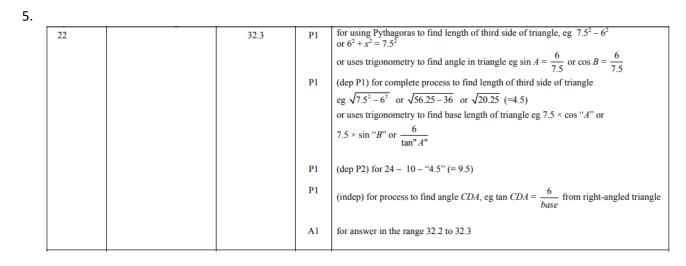
2	

25	17.3	P1	for full process to find either angle eg $(180 - 90) \div (2+3) \times 2$	May be seen on diagram
			or for 36 or 54 seen as an angle	Condone correct values if incorrectly placed.
		P1	for a correct equation using trigonometry eg cos $[A] = 14 + AB$	This must be shown as an equation with all four elements (eg cos, [A], 14, AB) present. [A] could be 36 or any angle clearly and unambiguously identified as A. This also applies to [B] with Sine.
		P1	(dep previous P mark) for rearranging their trigonometry equation to make AB the subject eg ($AB =$) "14 ÷ cos 36"	
		A1	for an answer in the range 17.3 to 17.4	If an answer is shown in the range in working and then incorrectly rounded award full marks.

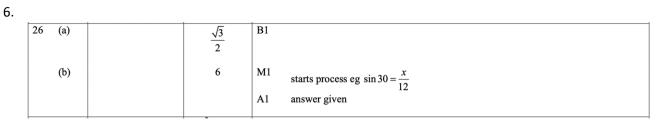
Pearson Edexcel - Tuesday 12 June 2018 - Paper 3 (Calculator) Foundation Tier

23	(a)	50.5	M1	for $\cos ABC = \frac{7}{11}$ (0.63) oe	Must be a complete statement for cos, sin or tan with all three elements present.
			Al	for answer in the range 50.4 to 50.51	If an answer is in the range 50.4 to 50.51 is given in the working space then incorrectly rounded, award full marks.
	(b)	Increase (supported)	Cl	States increase with supporting reason eg " $\frac{7}{10}$ is greater than $\frac{7}{11}$ " "0.636 is less than 0.7" "cos increases as angle decreases" "decreasing the denominator increases the value of the fraction" "angle is now 45.6" (accept 45.5 – 45.6)	If figures are given they must be correct (truncated or rounded).

Pearson Edexcel - Monday 6 November 2017 - Paper 2 (Calculator) Foundation Tier



Pearson Edexcel – Specimen 1 - Paper 1 (Non-Calculator) Foundation Tier



OCR November 09 November 2020- Morning (Calculator) Foundation Tier

7.

18	5.39[6] or 5.4[0]	3	M2 for 8 × tan 34 or any complete correct method or	e.g. $\frac{8}{\tan(90-34)}$
			M1 for tan 34 = $\frac{x}{8}$	e.g. $tan(90-34) = \frac{8}{x}$ See appendix

OCR Tuesday 5 November 2019 – Morning (Calculator) Foundation Tier

13	Shows correct working leading to 34.9[9] seen [rounding to 35]	3	M2 for tan ⁻¹ $\frac{14}{20}$ or M1 for tan [=] $\frac{14}{20}$ or tan[=] 0.7 or tan[x] [=] $\frac{14}{20}$ or 0.7	If using Pythagoras , sin or cos, mu have full method. Accept change of variable
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9.

18	5.39[6] or 5.4[0]	M2 for 8 × tan 34 or any complete correct method or	e.g. $\frac{8}{\tan(90-34)}$
		M1 for $\tan 34 = \frac{x}{8}$	e.g. $tan(90 - 34) = \frac{8}{x}$ See appendix

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

10.

14	(a)	(i)	4:5	1		Accept 1 : 1.25 or 1 : $\frac{5}{4}$ or 0.8 : 1 or $\frac{4}{5}$: 1
14	(a)	(ii)	1 : 7 final answer	3	B1 for 2100 [ml] or 0.3[l] seen M1 for correct partial simplification of <i>their</i> ratio	A correct partially simplified ratio in the same units implies B1 M1 eg 100 : 700
14	(b)		2 nfww	3	B1 for sin 30 = ½ oe B1 for tan 45 = 1	B marks can be implied if seen on the correct side of a ratio

OCR Tuesday 21 May 2019 – Morning (Calculator) Foundation Tier

11.

18		21.6[3]	3	Accept $6\sqrt{13}$ as final answer for 3 marks
				M2 for $\sqrt{12^2 + 18^2}$ soi by $\sqrt{468}$
				or M1 for 12 ² + 18 ² implied by 468
				See appendix

OCR Tuesday 11 June 2019 – Morning (Calculator) Foundation Tier

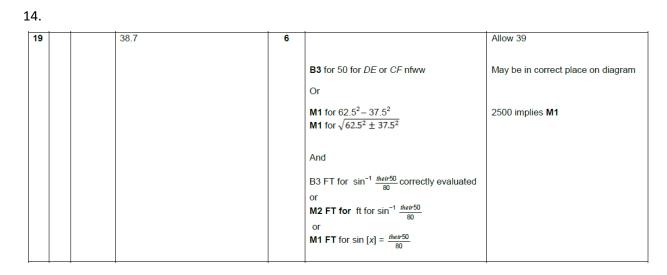
23	a		60 or 30 seen as angle 10 × sin 60 or 10 × cos 30 8.660[] Alternative method by Pythagoras	B1May be correctly marked on diagramM2M1 for sin 60 = $\frac{AC}{10}$ oe or cos 30 = $\frac{AC}{10}$ A1Dep on at least M1		Reverse method using 8.66 scores 0
			5 seen as side $\sqrt{10^2 - 5^2}$ 8.660[]	B1 M2 A1 dep	May be correctly marked on diagram or M1 for 10 ² – 5 ² Dep on at least M1	10² may be 100 and 5² may be 25
	b	i	$\frac{1}{2} \times \frac{1}{2} \times 10 \times 8.66[0]$ oe 21.65[]	M1 A1		Reverse method using 21.7 scores 0 May be in stages
		ii	260	2	M1 for 12 × 21.7 or B1 for 259.8 to 260.4	Award M1 for alternative complete methods

OCR Monday 12 November 2018 - Morning (Calculator) Foundation Tier

13.

21	3.488 to 3.489 or 3.49 or 3.5	3	M2 for 10.2 × sin20 or any complete correct method or	$\begin{array}{c} \cos 70 \times 10.2 \text{ or} \\ 10.2 \times \cos 20 \text{ and} \\ \sqrt{(10.2^2 - (10.2 \times \cos 20)^2)} \end{array}$
			M1 for sin 20 = $\frac{x}{10.2}$	Allow 10.2 × cos 20 with attempt at Pythagoras for M1

OCR Thursday 2 November 2017– Morning (Calculator) Foundation Tier



OCR Monday 6 November 2017– Morning (Calculator) Foundation Tier

19	a	180 + (1 + 2 + 3) × 3 [= 90]	2	M1 for 180 ÷ (1 + 2 + 3) If 0 scored, SC1 for angles 30, 60, 90	Condone 6 for 1 + 2 + 3
	b	7.5	4	B1 for sin 30° or cos 60° = ½ soi M2 for 15 sin 30 oe or M1 for x/15 = sin 30 oe	

Pearson Edexcel – Sample Papers - Paper 2 (Calculator) Foundation Tier

16.

24	20.9	M1	correct recall of appropriate formula eg sin $x = \frac{5}{14}$
		A1	for 20.9(248)

OCR Sample Question Paper 1 – Morning/Afternoon (Calculator) Foundation Tier

17.

20		2.8(0)	3	B1 for $\tan \theta = \frac{\text{opp}}{\pi}$	
			1 AO1.1 2 AO1.3a	M1 for $4 \times \tan 35$	

AQA Tuesday 19 May 2020 – Morning (Non-Calculator) Foundation Tier

Q	Answer	Mark	Comments		
	Alternative method 1				
	\cos and $\frac{9}{18}$ oe identified	M1			
	60	A1			
	Alternative method 2				
27	sin and $\frac{\sqrt{18^2 - 9^2}}{18}$ identified or tan and $\frac{\sqrt{18^2 - 9^2}}{9}$ identified	M1			
	60	A1			
	Additional Guidance				
	Accept an embedded answer, eg cos	$s 60 = \frac{9}{18}$	with no further working	M1A1	
	180 ÷ 3 = 60			M0A0	

AQA Thursday 11 June 2019 – Morning (Calculator) Foundation Tier

19.

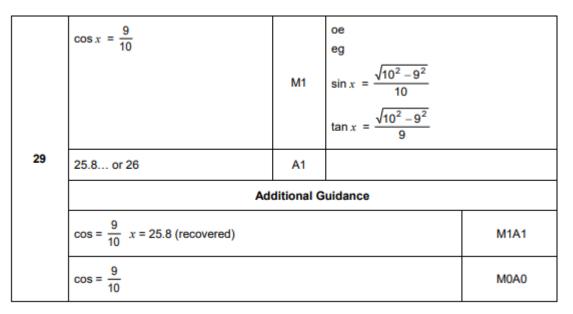
	Alternative method 1				
	$\sin x = \frac{13}{16}$ or $\sin^{-1}\frac{13}{16}$	M1	oe sin x = 0.8125		
	54(.3)	A1			
	Alternative method 2				
	$\cos x = \frac{13}{16}$ or $\cos^{-1}\frac{13}{16}$ and 90 - their [35.6, 36]	M1	oe		
	54(.3)	A1			
30	Alternative method 3				
	$\cos x = \frac{\sqrt{16^2 - 13^2}}{16}$		oe		
	or	M1			
	$\tan x = \frac{13}{\sqrt{16^2 - 13^2}}$				
	54(.3)	A1			
	Additional Guidance				
	$\sin = \frac{13}{16}$ or $\sin \frac{13}{16}$ or $\sin^{-1} = \frac{13}{16}$ unless recovered			мо	
	Answer 54 from scale drawing with no trigonometry			M0A0	

AQA Tuesday 6 November 2018 – Morning (Non-Calculator) Foundation Tier

24	$\frac{\sqrt{3}}{2}$	B1		
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AQA Monday 12 November 2018 – Morning (Calculator) Foundation Tier





AQA Monday 6 November 2017 – Morning (Calculator) Foundation Tier

	$\tan x = \frac{3}{7} \text{ or } \tan^{-1} \frac{3}{7}$ or $\sin x = \frac{3(\sin 90)}{\sqrt{3^2 + 7^2}}$ or $\sin x = \frac{3(\sin 90)}{\sqrt{58}}$ or $\cos x = \frac{7}{\sqrt{3^2 + 7^2}}$ or $\cos x = \frac{7}{\sqrt{58}}$ or $90 - \tan^{-1} \frac{7}{3}$ or $90 - [66.7, 66.81]$ or $90 - 67$	M1	eg cos $x = \frac{7^2 + (\sqrt{7^2 + 1})^2}{2 \times \sqrt{3^2}}$ Any letter	$\frac{\overline{+3^2}}{+7^2} \times 7$
29	[23, 23.3]	A1	uidance	
	$\tan = \frac{3}{7}$ or $\tan \frac{3}{7}$ or $\tan^{-1} = \frac{3}{7}$ (un			мо
	Answer [23, 23.3] (possibly coming fro			M1A1
	If using sine rule must rearrange to si	in x = for	r M1	
	If using cosine rule must rearrange to	cos <i>x</i> =	for M1	
	Allow [0.42, 0.43] for $\frac{3}{7}$			
	Allow 2.33 for $\frac{7}{3}$			
Allow [7.6, 7.62] for $\sqrt{3^2 + 7^2}$				

AQA Thursday 25 May 2017– Morning (Non-Calculator) Foundation Tier

23.

	0	B1			
27	Additional Guidance				

AQA Thursday 8 June 2017– Morning (Calculator) Foundation Tier

	$\sin 72 = \frac{x}{8}$ or 8 × sin 72 or cos (90 - 72) = $\frac{x}{8}$ or 8 × cos (90 - 72) or $\frac{x}{\sin 72} = \frac{8}{\sin 90}$ or $\frac{\sin 72}{x} = \frac{\sin 90}{8}$	M1	oe eg 8 cos 72 or 2.47 or 2.5 and $\sqrt{8^2 - (8 \cos 72)^2}$			
	[7.6, 7.61]	A1				
29	Additional Guidance					
	If trigonometry and Pythagoras are use that would lead to the correct value of x					
	Accept sin 72 × 8	M1				
	Accept opp or o for x eg sin 72 = $\frac{\text{opp}}{8}$			M1		
	$\sin = \frac{x}{8}$ or $\sin \theta = \frac{x}{8}$ (unless recovered	M0				
	Answer coming from scale drawing	M0A0				
	Answer in range seen followed by 7 or	M1A1				

AQA Sample Paper 1– Morning (Non-Calculator) Foundation Tier

29(a)	0.64	B1	
29(b)	$\frac{x}{4} = \cos 50^{\circ}$ or $\frac{x}{4} = \text{their } 0.64$ or $4 \times \text{their } 0.64$	М1	oe their 0.64 from (a)
	2.6	A1ft	oe ft their 0.64 from (a)