

FP1 Trigonometry Answers

3	One solution is $x = 10^\circ$ Use of $\sin 130^\circ = \sin 50^\circ$ Second solution is $x = 30^\circ$ Introduction of $90n^\circ$, or $360n^\circ$ or $180n^\circ$ GS $(10 + 90n)^\circ, (30 + 90n)^\circ$	B1 M1 A1 M1 A1✓	5	PI by general formula OE OE Or $\pi n/2$ or $2\pi n$ or πn OE; ft one numerical error or omission of 2nd soln
Total			5	

4	$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$ stated or used Appropriate use of \pm Introduction of $2n\pi$ Division by 3 $x = \pm \frac{\pi}{18} + \frac{2}{3}n\pi$	B1 B1 M1 M1 A1	5	Condone decimals and/or degrees until final mark Of $\alpha + kn\pi$ or $\pm \alpha + kn\pi$
Total			5	

7(a)	Particular solution, eg $-\frac{\pi}{6}$ or $\frac{5\pi}{6}$ Introduction of $n\pi$ or $2n\pi$ GS $x = -\frac{\pi}{6} + n\pi$	B1 M1 A1F	3	Degrees or decimals penalised in 3rd mark only OE(accept unsimplified); ft incorrect first solution
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6	One value of $2x - \frac{\pi}{2}$ is $\frac{\pi}{3}$ Another value is $\pi - \frac{\pi}{3} = \frac{2\pi}{3}$ Introduction of $2n\pi$ or $n\pi$ General solution for x GS $x = \frac{5\pi}{12} + n\pi$ or $x = \frac{7\pi}{12} + n\pi$	B1 B1F M1 m1 A2,1	6	OE (PI); degrees/decimals penalised in 6th mark only OE (PI); ft wrong first value OE; A1 if one part correct
Total			6	