



1. Solve  $\sin(x + 10) = \frac{\sqrt{3}}{2}$ , for  $0 \leq x \leq 180$

(3)

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2. Solve  $\cos 2x = -0.9$ , for  $0 \leq x \leq 180$ , giving your answers to 1 decimal place.

(3)

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3. Find all the values of  $x$ , to one decimal places, in the interval  $0 \leq x \leq 360$  for which  $\tan^2 x = 4$

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### Solutions

1.

$\sin(x + 10) = \frac{\sqrt{3}}{2}$ $x + 10 = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$	<b>M1</b>
$x + 10 = 60$ $x = 50^\circ$	<b>M1</b>
$x + 10 = 180 - 60$ $x = 110^\circ$	<b>M1</b>

2.

$2x = \cos^{-1}(-0.9)$	<b>M1</b>
$2x = 154.2^\circ$ $x = 77.1^\circ$	<b>M1</b>
$2x = 360 - 154.2$ $x = 102.9^\circ$	<b>M1</b>

3.

$\tan^2 x = 4$ $\tan x = \pm 2$	<b>M1</b>
$x = \tan^{-1}(2)$ $x = 63.4^\circ$ , $x = 180 + 63.4 = 243.4^\circ$	<b>M1</b>
$x = \tan^{-1}(-2)$ $x = -63.4^\circ$ , $x = 180 + -63.4 = 116.6^\circ$ $x = 360 + -63.4 = 296.6^\circ$	<b>M1</b>

