

Trigonometry HW1

1. Solve $2 \cos x = \sqrt{3}$ for x , where $0 \leq x < 2\pi$.

- A. $\frac{\pi}{3}$ and $\frac{5\pi}{3}$
 B. $\frac{\pi}{3}$ and $\frac{2\pi}{3}$
 C. $\frac{\pi}{6}$ and $\frac{5\pi}{6}$
 D. $\frac{\pi}{6}$ and $\frac{11\pi}{6}$

2

[SQA] 2. Find the values of t , where $0 < t < 2\pi$, for which $4 \cos(2t - \frac{\pi}{4})$ has its maximum value.

4

[SQA] 3. Solve the equation $2 \cos^2 x = \frac{1}{2}$, for $0 \leq x \leq \pi$.

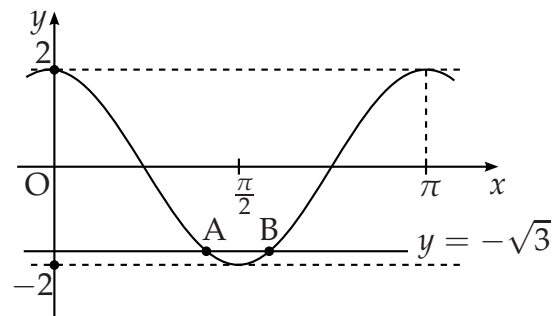
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[SQA] 4. Find, correct to one decimal place, the value of x between 180 and 270 which satisfies the equation $3 \cos(2x^\circ - 40^\circ) - 1 = 0$.

5

[SQA] 5. The diagram shows the graph of a cosine function from 0 to π .

- (a) State the equation of the graph.
 (b) The line with equation $y = -\sqrt{3}$ intersects this graph at point A and B.
 Find the coordinates of B.



1

3

6. (a) Express $\sin 3x + \sqrt{3} \cos 3x$ in the form $k \cos(3x - a)$ where $k > 0$ and $0 \leq a \leq \frac{\pi}{2}$.

4

(b) Hence solve the equation $\sin 3x + \sqrt{3} \cos 3x = 1$ for $0 \leq x \leq \frac{\pi}{2}$.

3

[END OF QUESTIONS]