

Quiz 11

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.198#27 (5 marks) Verify the following identity:

$$\frac{2 \cot \theta}{\csc^2 \theta} = \sin 2\theta$$

$$2 \cot \theta = \sin 2\theta \csc^2 \theta$$

$$2 \cot \theta = 2 \sin \theta \cos \theta \csc^2 \theta$$

$$\frac{2 \cos \theta}{\sin \theta} = 2 \sin \theta \cos \theta \left(\frac{1}{\sin^2 \theta} \right)$$

$$\frac{2 \cos \theta}{\sin \theta} = \frac{2 \cos \theta}{\sin \theta}$$

Question 2. pg.203#2f (5 marks) Solve for x where $0 \leq x < 2\pi$, giving the exact solutions:

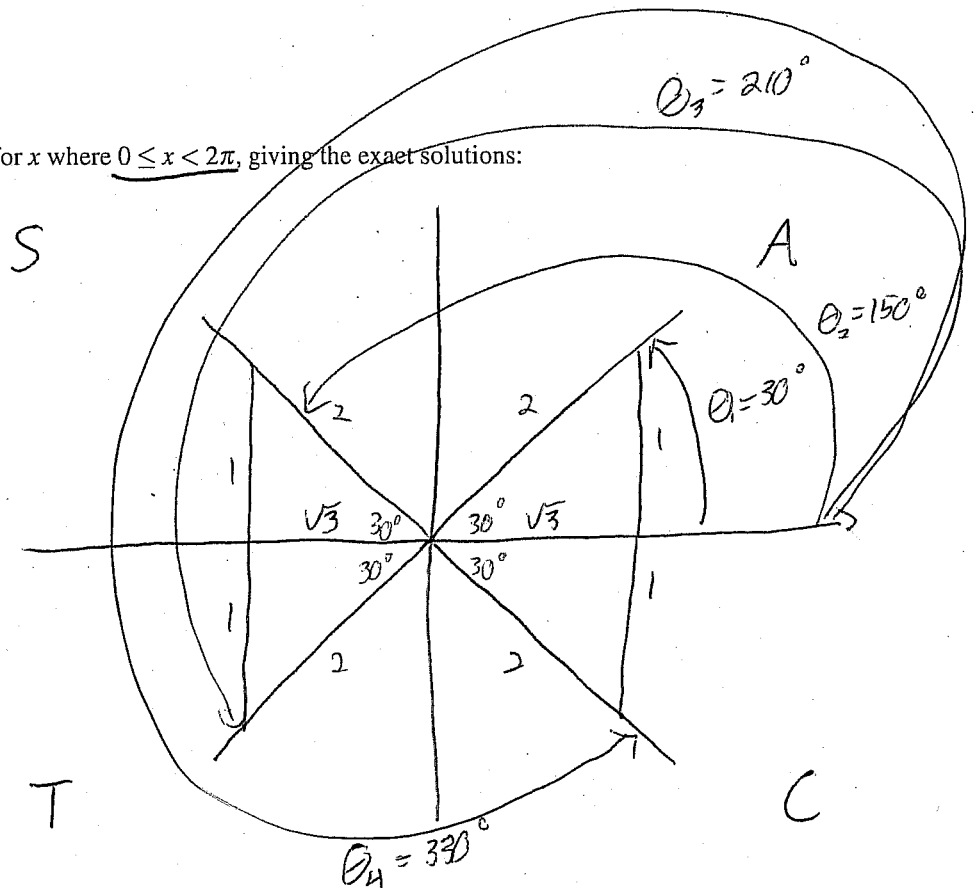
$$4 \cos^2 x - 3 = 0$$

$$4 \cos^2 x = 3$$

$$\cos^2 x = \frac{3}{4}$$

$$\cos x = \pm \sqrt{\frac{3}{4}}$$

$$\cos x = \pm \frac{\sqrt{3}}{2} = \frac{\text{adj}}{\text{hyp}}$$



$$\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$$