Precal 40S Test #2(8-12)C M. Tougas

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Nom_____ Date_____

Part A : Multiple choice (choose the best response)

1. Find a coterminal angle to $\frac{14\pi}{3}$.

a) $\frac{-\pi}{3}$ b) $\frac{-2\pi}{3}$ c) $\frac{-4\pi}{3}$ d) $\frac{-5\pi}{3}$

2. The solution to the trigonometric equation is: $x = \frac{3\pi}{4} + k\pi, k \in Z$.

Which of the following equations would have this as it's solution?

a) $\cos x = \frac{-1}{\sqrt{2}}$ b) $\sin x = \frac{1}{\sqrt{2}}$ c) $\tan x = -1$ d) $\cot x = 1$

3. Find the exact value of $\sin\left(\frac{-11\pi}{4}\right)$

a) $\frac{\sqrt{2}}{2}$ b) $-\frac{1}{2}$ c) $-\frac{\sqrt{2}}{2}$ d) $\frac{1}{2}$

4. Find the exact value of $\csc\left(\frac{11\pi}{6}\right)$?

a) 2 b) -2 c) $\frac{2}{\sqrt{3}}$ d) $\frac{-2}{\sqrt{3}}$

5. Solve on the interval $-2\pi \le \theta \le -\pi$: $\cos\theta = -1$

a) $\theta = \frac{-3\pi}{2}$ b) $\theta = \frac{\pi}{2}, \frac{3\pi}{2}$ c) $\theta = -\pi$ d) $\theta = -2\pi$

6. How many solutions would you find on the interval $0 < \theta < 3\pi$ if $\sin\theta = \frac{-1}{4}$?

a) 1 b) 2 c) 3 d) 4

7. Find the exact value of $\sin\left(\cos\left(\frac{\pi}{2}\right)\right)$

a) -1 b) 0 c) 1 d) none of these answers

Part B : Short Answer (non-calculator)

1. Express 170° in radians. Completely simplify.

2. Find a coterminal angle to $-\frac{3\pi}{11}$ in the interval [0, 2π].

3. Solve the following equation on the interval [0, 2π].: $\cos\theta = \frac{\sqrt{3}}{2}$

4. Sketch 3 radians in standard position.

5. Solve the following equation on the interval $0 \le x \le \pi$: $\tan x = -\sqrt{3}$

6. Convert the angle $\frac{\pi}{10}$ in degrees.

Part C : Long answer (NO CALCULATOR)

1. Find the coordinates of the point that is the intersection of the unit circle and the terminal arm of the angle.

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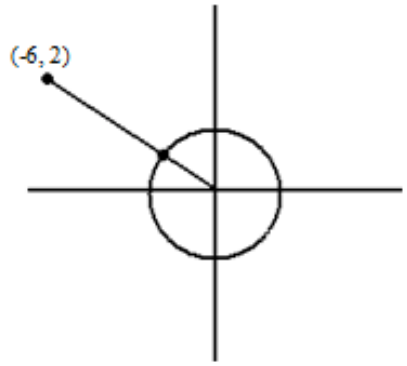

2. If $\csc\theta = 3$, find the exact values if $\frac{\pi}{2} < \theta < \pi$.

a) cos θ /2

b) sec θ /1

c) cot θ /1

3. Find the general solution to the following equation: $\sin^2\theta - 2\sin\theta - 3 = 0$.

/4

4. Evaluate using exact values:

a) $\sin^2\left(\frac{13\pi}{6}\right) - \cos^2\left(\frac{-5\pi}{6}\right) - \sec\left(\frac{4\pi}{3}\right)$

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b) $\cos\left(\frac{7\pi}{6}\right)\csc\left(\frac{2\pi}{3}\right) - \cot\left(\frac{7\pi}{4}\right)$

/3

Part D: Long answer (WITH CALCULATOR) **Name :** _____

1. Solve the following equation on the interval $[0, 2\pi]$: $2\sec^2 x + \sec x - 6 = 0$

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2. Solve the following equation on the interval $0 \le \theta \le 2\pi$. $\tan^2 \theta - 2\tan\theta - 7 = 0$.

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3. The diameter of the wheel is 1.2 meters. The wheel travels a distance of 2.5 meters. Find the angle of rotation, in degrees, that is travelled.

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