

57770 Practice for Exam 3

This statement will appear on the exam:

Honor Statement: I _____ understand that this is a closed notes, eyes on my own paper, no calculator, no talking exam. I assure you and my fellow students that all of the work on this exam is my own and I will not cheat in any way, shape or form on this test.

I also agree that I will turn in this exam on time and not go over the time allotted.

Signed: _____

Be sure to show work. No partial credit can be given if you do not. If you do not show your work you will not be able to get full credit. If you use short cuts and/or tricks be sure to explain what you are doing. Box your final answers to distinguish your final answer to distinguish it from any relevant work used to get it. Come ask me if you don't understand any questions.

WAIT FOR ME TO ANNOUNCE THAT YOU SHOULD BEGIN THE TEST BEFORE TURNING THIS PAGE.
ALSO, THIS PRACTICE EXAM IS TOO LONG. IF YOU CAN DO HALF OF IT IN 50 MINUTES THAT SHOULD BE A GOOD PACE.

Problem 1 (1 point). Show $\cos(\alpha + \beta) = \cos(\alpha) \cdot \cos(\beta) - \sin(\beta) \cdot \sin(\alpha)$ directly by computing each piece where $\alpha = \pi/3$ and $\beta = 3\pi/2$.

Problem 2 (2 points). Graph the following:
a) $y = -4 \sin(\pi x) + 1$

b) $y = 3 \tan(2x)$

Problem 3 (2 points). *Evaluate the following functions:*

a) $\cos(\sin^{-1}(-1/2))$

b) $\tan(\cos^{-1}(1/3))$

c) $\sin(\sin^{-1}(1/3) + \cos^{-1}(4/5))$

d) $\tan^{-1}(\tan(6\pi/5))$

Problem 4 (2 points). Find values for all six trigonometric functions provided the given information a) $\sin(\theta) = 1/7$ $\pi/2 < \theta < 3\pi/2$

b) $\tan(\theta) = \sqrt{2}$ $\pi/2 < \theta < 3\pi/2$

$$c) \csc(\theta) = -5 \quad \pi/2 < \theta < \pi$$

$$d) \sec(\theta) = 2 \quad 0 < \theta < \pi/2$$

Problem 5 (2 points). *Show the following identities: a) $\cos(\alpha+\beta)+\cos(\alpha-\beta) = 2 \cos(\alpha) \cos(\beta)$.*

$$b) \tan \theta + \frac{\cos \theta}{1 + \sin \theta} = \sec \theta$$

$$c) \frac{1-\sin\theta}{\cos\theta} + \frac{\cos\theta}{1-\sin\theta} = 2 \sec\theta$$

$$d) \frac{1-\sin\theta}{1+\sin\theta} = (\sec\theta - \tan\theta)^2$$

Problem 6 (1 point). *Is the function even, odd or neither?*

a) $f(x) = -3\sin(2x) + \tan(x) - 1$

b) $g(x) = 4\cot(x) - \sin(x)$