

Name: _____
Math 195 Precalculus

Fall 2015
Quiz 5

Please show all work and **box your final answers**. You are allowed to discuss the problems with others, but please write up your solutions independently.

This quiz is to be handed in at the final exam. Please arrive at the final exam early, and turn in this quiz before the exam begins.

FINAL EXAM INFO:

Math 19500-FG: Thursday 12/17, 3:30-5:45pm, Marshak 1

Math 19500-GH: Monday 12/21, 6-8:15pm, NAC 4/130

1. Find the exact value of the following expressions.

(a) $\cot\left(\frac{13\pi}{6}\right)$

(b) $\cos^{-1}\left(-\frac{1}{2}\right)$

(c) $\sin^{-1}\left(\sin\left(\frac{3\pi}{4}\right)\right)$

(d) $\cos(165^\circ)$

(e) $\sin(22.5^\circ)$

2. Suppose $\cos x = \frac{5}{6}$ and $\tan x < 0$.

(a) In which quadrant does the angle x terminate?

(b) Find $\sin x$.

(c) Find $\sin 2x$.

3. Simplify and rewrite the following trigonometric expression as a single trigonometric function.

$$\frac{\cot \theta}{\csc \theta - \sin \theta}$$

4. Find all solutions to the following trigonometric equation.

$$\csc^2 \theta - 4 = 0$$

5. Consider the following trigonometric function.

$$f(x) = -2 \sin(4x - \pi) + 1$$

- (a) What is the amplitude of f ?
- (b) What is the period of f ?
- (c) Rewrite f in the form $f(x) = A \sin(F(x - h)) + k$.
- (d) Sketch one period of the graph $y = f(x)$. Label all maximums, minimums, and intercepts with their coordinates.