Math	130	-	Qui	z 3
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September 4, 2019

Name _	
	Score

Show all work to receive full credit. Supply explanations when necessary. You must work individually on this quiz. This quiz is due September 9.

1. (3.5 points) The point (-4, 10) is on the terminal side of an angle in standard position. Find the exact values of the six trigonometric functions at that angle. Simplify your answers as much as possible.

2. (3.5 points) The angle θ lies in the 3rd quadrant and $\cos \theta = -0.8$. Find the exact values of the six trigonometric functions at the angle θ .

3. (1 point) Prove that $\sin^2 \theta - \cos^2 \theta = 2\sin^2 \theta - 1$ by using trig identities to transform one side of the equation into the other.

4. (3 points) Determine the exact value of each without using a calculator.

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

(b)
$$\sin\left(\frac{-23\pi}{4}\right)$$

(c)
$$\sec(-570^{\circ})$$

5. (2 points) The shortest side of a $30^{\circ} - 60^{\circ} - 90^{\circ}$ triangle has length 30 units. Find the lengths of the hypotenuse and the other side.

6. (2 points) At 15 feet from the base of a flagpole, the angle of elevation to the top is 75° . How tall is the flagpole?