Quiz 2

Fall 2014

Name _

- You have 20 minutes No calculators Show adequate work
- 1. A population P of bacteria starts with 100 bacteria and **triples** in size every **half** hour.
 - (a) How many bacteria are there after 2 hours?

P(2) =

(b) How many bacteria are there after t hours?

(c) At what time will there be 1000 bacteria? Give an exact answer involving logs.

P(t) =

t =

2. Find all values of x in the interval $[0, 2\pi]$ that satisfy the equation

$$\csc^2 x = 2.$$

Give your answer in radians; it should not involve any inverse trig functions.

x =

3. Find the exact value of L, where

$$L = \frac{1}{3}\log_3 8 - \log_3 90 + \log_3 1 - \log_3(\frac{1}{5})$$

There should not be any logs in your answer.

L =

4. If sec $\theta = 5/4$ and $0 \le \theta \le \pi/2$, use a trig identity to evaluate

 $\sin(2\theta)$

 $\sin(2\theta) =$