Additional Review

Log and Exponent Word Problems (you may use a calculator for these)

1. A radioactive substance has a half-life of 420 years. How much remains of a 2 oz. sample after 200 years?

2. A bacteria culture has an initial count estimate of 4000. After 20 minutes the count is 22, 400. What is the growth rate, and approximately how many minutes did it take for the culture to double?

3. $3000 is invested in an account that pays 5% annual interest. How much more money would you make if the interest was compounded daily for 10 years instead of compounded quarterly?

4. How many years will it take an investment of $1000 to double itself when interest is compounded continuously at 6% annually?

Polar Coordinates

Convert from polar coordinates to rectangular coordinates

1. $\left(5, \dfrac{\pi}{6}\right)$

2. $\left(2, \dfrac{3\pi}{4}\right)$

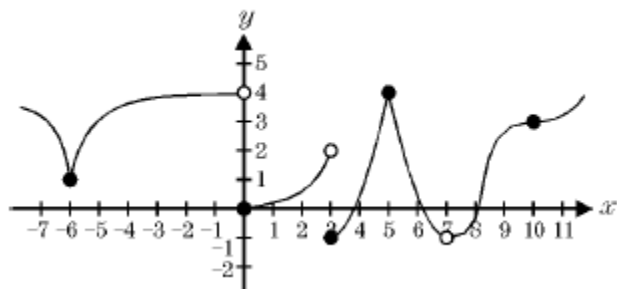Convert from rectangular coordinates to polar coordinates

3. (-3,0)

4. (-2, -2)

Parametric Equations

Eliminate the parameter and draw a graph for the following parametric equations

1. $x = t + 2$
   $y = t - 5$

2. $x = 3 + t^2$
   $y = 2t$

3. $x = 2\cos t$
   $y = 2\sin t$

Limits

Use the graph of f(x) below to find the following limits

1. $\lim\limits_{x \to -6} f(x) =$

2. $\lim\limits_{x \to 0} f(x) =$

3. $\lim\limits_{x \to 3} f(x) =$

4. $\lim\limits_{x \to 5} f(x) =$

5. $\lim\limits_{x \to 7} f(x) =$

6. $\lim\limits_{x \to 10} f(x) =$

7. $\lim\limits_{x \to 0^-} f(x) =$

8. $\lim\limits_{x \to 0^+} f(x) =$

9. $\lim\limits_{x \to 3^-} f(x) =$

10. $\lim\limits_{x \to 3^+} f(x) =$

Derivatives

Look over your last test.

For all units, it will be helpful to review your previous tests and quizzes, especially questions you missed.
Good luck on your exam!