

Name \_\_\_\_\_  
Date \_\_\_\_\_

### Review Quiz #5

Due at the beginning of class on Monday, June 6, 2005

**Directions:** This is a take home quiz. **Show your work!** You may use any notes and/or the textbook. You may not work with any other person or the internet (if in doubt, ask Mr. Evans). Put in the appropriate time and you can do well on this quiz. Each question is worth 3 points; one question will be extra credit.

**No work = No credit**

Circle your answer

1. Consider the sequence  $\frac{5}{4}, \frac{25}{24}, \frac{125}{144}, \frac{625}{864}, \dots$ 
  - a. Give the constant ratio of the sequence.
  - b. Find the recursive formula for the sequence.
  - c. Find an explicit formula for the nth term.
2. Suppose you deposit \$800 in an account that pays 5% interest compounded annually. You make no additional deposits or withdrawals. How long will it take to double the money?
3. Let  $f(x) = 2x^3 + 1$  and  $g(x) = 3x^2 - 2$ . Evaluate  $f(g(3))$ .
4. A function has an equation  $y = 5x - 4$ . Give an equation for its inverse.

5. How many times more acidic is a solution with  $\text{pH} = 1.7$  than a solution with  $\text{pH} = 3.4$ ?
6. Find the exact value of  $\cos 450^\circ$ .
7. An airplane flying at an altitude of 4 miles begins a smooth final descent to the runway when it is 30 miles away. At what angle of depression will the plane descend?
8. Write a whole number or a simple fraction for  $\left(\frac{81}{16}\right)^{3/4}$ .
9. A ladder leaning against a wall forms an angle of  $55^\circ$  with the ground. If the bottom of the ladder is 11.5 feet from the base of the wall, how long is the ladder?
10. Solve  $\begin{cases} x^2 + y^2 = 9 \\ x + y = 1 \end{cases}$ .