

Math 176  
Quiz 5  
Professor Busken

Name: \_\_\_\_\_

**Directions:** You may NOT use a calculator. The use of any other electronic devices are strictly prohibited. Show your work on ALL of the questions. Do NOT work together. Tutor help NOT okay. Due Monday, September 19th at 5:30 pm., with no exceptions. Late work will not be accepted.

1. Find the solution  $-x^2(x^2 + 1)(x^2 - 1) < 0$ .

1. \_\_\_\_\_

2. Describe the end behavior of the graph of  $P(x) = -7x^3 - 4x + 8$ .

2. \_\_\_\_\_

3. Find a fourth degree polynomial with zeros  $1 - 2i$  and  $1$ , with  $1$  a zero of multiplicity 2.

3. \_\_\_\_\_

4. Identify the vertical asymptote for  $f(x) = \frac{2}{x - 1}$ .

4. \_\_\_\_\_

5. Describe the behavior of the graph of  $f(x) = \frac{2}{x - 1}$  around its vertical asymptote.

5. \_\_\_\_\_

6. Identify the horizontal asymptote for  $f(x) = \frac{2}{x-1}$ .

6. \_\_\_\_\_

7. Write a description of the end behavior for the graph of  $f(x) = \frac{2}{x-1}$ .

7. \_\_\_\_\_

8. What interval represents the range of  $f(x) = 2^{x-1} - 3$ ?

8. \_\_\_\_\_

9. What equation represents the horizontal asymptote for  $f(x) = 2^{x-1} - 3$ ?

9. \_\_\_\_\_

10. Suppose \$600 is invested at an interest rate of 2.5% per year. Find the amount of the investment at the end of 10 years if interest is compounded continuously?

10. \_\_\_\_\_