

Math 251- Calc I

Homework #3

Dr. Tovar

Book: Essential Calculus by Stewart

Note: You will need graph paper for this assignment. If you do not have any, you may print some: do a google images search for “graph paper”.

Elementary Functions

1) Consider the following function:

$$f(x) = (3x^2)/(2x + 1)$$

- Create a table of values, and using graph paper, graph the function.
- Classify and Discuss the function.

2) Consider the following function:

$$\text{sinc}(x) = \sin(x)/x$$

- Create a table of values, and using graph paper, graph the function.
- Classify and Discuss the function.

3) Reduce the following using Synthetic Division (show your work)

$$f(x) = (x^4 + 7x^3 + 5x^2 + 6x + 3)/(x^2 + 9)$$

4) Suppose

$$f(x) = x^2 + 4 \quad g(x) = e^{(-x^2)}$$

Calculate

- $f(x) \circ g(x)$
- $g(x) \circ f(x)$
- $f(x) \circ g(x) - g(x) \circ f(x)$

5)

- Graph $f(x) = e^{(-x^2)}$ on graph paper
- Graph $h(x) = 3 - 4f(-5x)$ on the same graph.