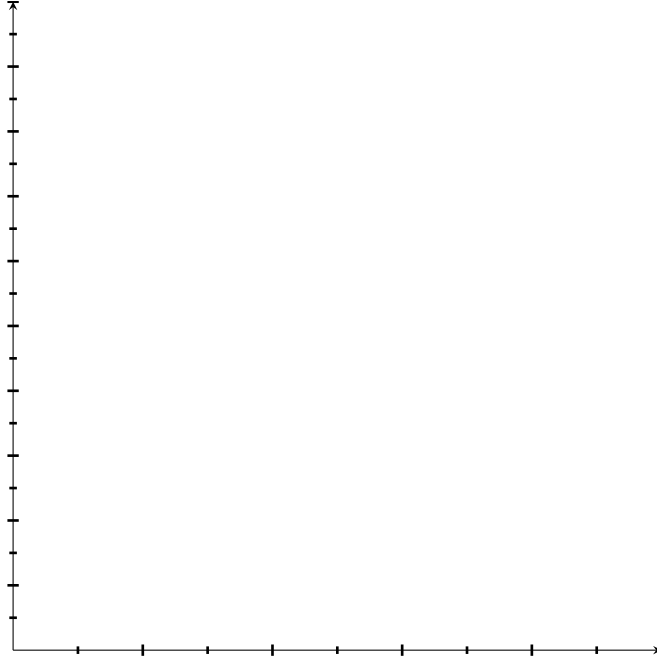


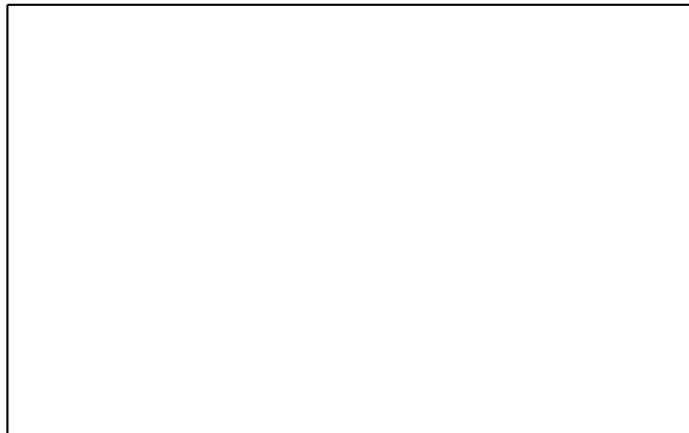
Name _____

Homework 5
Sections 1.2&1.3

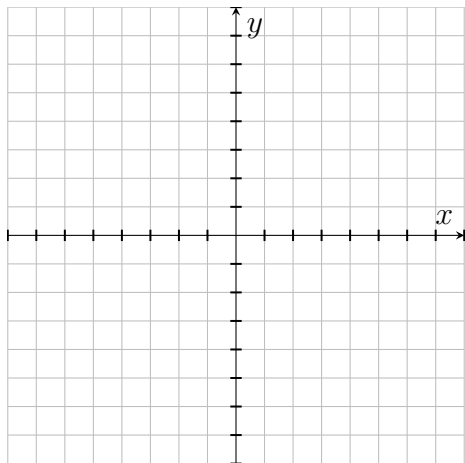
1. (3) The cost of a ride on a certain airport shuttle is \$8 for up to 6 miles and then \$1 for each additional mile, or fraction of a mile, traveled. [For example a 9 mile trip costs \$11, while a 9.1 mile trip costs \$12]. Sketch the cost of a ride on this shuttle as a function of distance for 0 to 10 miles. Be sure to label axes with correct units.



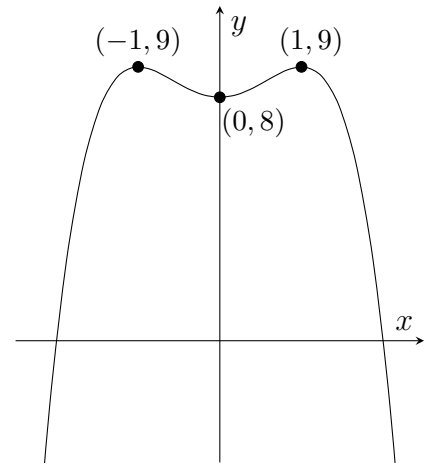
2. (3) Sketch a graph of the function $f(x) = \frac{x}{x^3 - 1}$ in the window $[-3, 1] \times [-1, 1]_{0.5}$. Use your calculator to determine the coordinates of the turning point(s) (round to the nearest 0.001).



3. (3) Sketch the piece-wise defined function $g(x) = \begin{cases} -x & x < -3 \\ \sqrt{9-x^2} & -3 \leq x < 3 \\ 4 & x \geq 3 \end{cases}$ on the axes below. Assume each axis is marked in units of 1.



Grid for #3



Graph of $L(x)$ for #4

4. (2ea) Use the function $L(x) = (4-x^2)(2+x^2)$, whose “complete graph” is given above, to determine

(a) The x -intercepts

(b) The interval(s) over which the function is *both* positive and increasing

(c) The interval(s) over which the function is *both* negative and decreasing

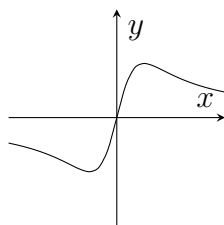
5. (3) Sarah is going to drive approximately 120 miles from Tucson to Phoenix. On the way she will pass through Eloy which is about halfway between Tucson and Phoenix. Suppose she drives at a constant speed and makes no stops along the way. All three of the following parts reference Sarah's trip from Tucson to Phoenix. Label the axes appropriately and label the point where Sarah passes through Eloy.

(a) Sketch a graph of Sarah's distance from Tucson versus time as she makes her drive.

(b) Sketch a graph of Sarah's distance from Phoenix vs time as she makes her drive.

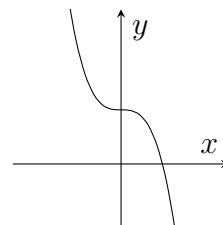
(c) Sketch a graph of Sarah's distance from Eloy versus time as she makes her drive.

6. (2) Use the graphs below to determine if the functions are even, odd or neither.



Circle one:

Odd Even Neither



Circle one:

Odd Even Neither