

Homework 2

MATH 130: Calculus I, Sections 2 and 3 Fall Semester 2013

Follow the separate general guidelines for the Reading Assignment and the Warm-Up Exercises (the salmon colored handout). Be sure to include and label all four standard parts a,b,c,d of the Reading Assignment in what you hand in. Be sure to staple together each assignment (though keep the Reading Assignment separate from the Warm-Up Exercises, etc.), and include your name and which section of calculus you are in at the top.

Reading Assignment (Due at the beginning of lab on Thursday, August 29th)

Read:

1. Section 1.1, pages 1-7 (again)
2. Section 1.2, pages 10-18

Reading Questions for part (a):

1. If $f(x)$ and $g(x)$ are both odd functions with domain and range the real numbers, can you say whether the function h defined by $h(x) = f(x) - g(x)$ is an odd function or an even function, or neither? What about $j(x) = \frac{f(x)}{g(x)}$? Be sure to explain your answer.
2. Draw the Venn diagrams in Figure 1.14 of the text. Where do linear functions fit into this? Add it to your picture and briefly explain why it fits there. Why do the authors make it look like polynomials are rational functions? Choose a function of each type and add it to your diagram in the proper location (that is, choose a rational function that is not a polynomial and insert it in the circle that includes rational functions but not polynomials, etc.).
3. Describe in your own words what is meant by a piecewise linear function. Give two examples of such functions and graph them.
4. Suppose you are given the graph of $y = f(x)$. Describe how you would obtain the graph of the function $y = -f(x - 4)$.

Remember parts b-d!

Warm Up Exercises (Due in class on Friday, August 30)

- 1) Give an example of a function that is even, an example of a function that is odd, and an example that is neither. (Don't use the examples from class!) Experiment a little with how complicated you can make it! Then **justify** that your functions fulfill the requirements.
- 2) (a) Draw the graph of $f(x) = \sqrt{x} + 2$.
(b) Draw the graph of $g(x) = f(x) + 3$. (That is, use f from part a.)
(c) Draw the graph of $h(x) = f(x + 3)$.
- Section 1.2 (pages 19-20): 12, 16, 18, 29 (for 29 describe in words how you chose the formulas).

***Note that there are answers to odd problems in the back of the text. I encourage you to check your answers AFTER you have completed each problem. Be sure you understand that the back of the book just includes final answers and not full solutions - you need to show how you can arrive at the final answer.