

Homework 1

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 by 3:00pm on Tuesday, August 27)

Read:

1. The syllabus!
2. Preface (optional)
3. Note to Students, page xviii
4. Appendix A, pages 1061-1067
5. Section 1.1, pages 1-7

Reading Questions for part (a):

1. Express the interval $(-\infty, 3]$ in set notation and state its meaning in words. Then draw the set on the number line.
2. Explain how and **why** the vertical line test works.
3. Suppose you are trying to determine the domain of a function f . What are the two most important problems that restrict your domain? Can you think of others?
4. Suppose we have the functions $f(x) = 2x - 3$ and $g(x) = \frac{2x^2 + 5x - 12}{x + 4}$.
 - (i) What are the domains of f and g ?
 - (ii) Factor the numerator of g and simplify the function.
 - (iii) Are f and g the same function? Why or why not?
5. 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 $j(x) = f(x) \cdot g(x)$?

Warm Up Exercises (Due in class on Wednesday, August 28)

- Groupwork sheet (Notation and Review Practice) handed out in class on Monday.
- Appendix A (pages 1067-108): 5, 6, 19, 23, 29
- Section 1.1 (page 8): 48, 49 (the calculator check is optional)

***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.