Calculus: Homework
9/6 – 9/15

due: Thursday: read pp. 1-5

1. Write using interval notation:
   a. $-2 < x \leq 5$ b. $x > 2$ c. $-1 < x < 7$ d. $-5 \leq x \leq 4$ e. $x \leq 9$ f. $0 \leq x < 3$
2. Write using inequalities:
   a. $[7,11]$ b. $[-6,-1)$ c. $(-\infty,5)$ d. $(3,18]$ e. $[4,\infty)$ f. $(-9,5)$
3. Graph: a. $(-1,5)$ b. $[4,9]$ c. $[6,\infty)$ d. (-7,-2]

Friday: read pp. 5-9

pp. 9-10 / #10, 11, 12, 22 23

Monday: read pp. 24-28

1. pg. 40 / #1, 2, 3, 4
2. Determine which sets define functions:
   $a.\{(3,7)\}$ b. $\{(4,6),(4,8)\}$ c. $\{(2,7),(5,7),(8,7)\}$ d. $\{(x,y)|y = 7x - 2\}$
3. Find the domain and the range of each function:
   a. $y = 3x - 2$ b. $y = x^2 + 3$ c. $y = \sqrt{x-2}$

on: Monday: quiz

due: Tuesday: read pg. 29

1. pg. 41 / #13, 16, 17, 21
2. Find the domain and the range of each function:
   a. $y = \begin{cases} x^2 - 4 & if\ x < 3 \\ 2x - 1 & if\ x \geq 3 \end{cases}$ b. $y = \frac{(x+1)(x^2+3x-10)}{x^2+6x+5}$

Wednesday: read pp. 34-35

1. pg. 41 / #51, 53
2. Write each function without using absolute value signs, sketch, find the domain and the range: a. $y = |x + 2| + 4$ b. $y = |2x - 1| + x$

Thursday: read pp. 35-36

Sketch, find the domain and the range:

1. $y = [\![x]\!] - 2$ 2. $y = 2sgn(x)$ 3. $y = U(x) + 3$ 4. $y = 4sgn(x) + 3U(x)$

Friday: read pp. 32-33, 36-37

1. pp. 41-42 / #33-42, 57, 59, 62, 78b
2. Find the zeros of the following functions:
   a. $f(x) = x^2 - x - 12$ b. $f(x) = 6$ c. $f(x) = \frac{x-1}{x^2-4}$

Monday: read pp. 38-39

1. pg. 42 / #73
2. Given: $f(x) = x + 2$ and $g(x) = x^2 - x - 2$ Determine the domain and a rule for:
   a. $(f + g)(x)$ b. $(f - g)(x)$ c. $(f \cdot g)(x)$ d. $(f/g)(x)$ e.$(g/f)(x)$