Homework 4
Math 147 (section 510-511-512), Fall 2014

This homework is due on Thursday, September 25. Hint: If you do not have a graphing calculator, you can use this one online: https://www.desmos.com/calculator

0. Read Sections 3.2, 3.3, 3.4

1. Section 1.2 # 18

2. For each of the following functions $h(x)$, determine the domain and where (at which points) the function is continuous. Additionally, find functions $f(x)$ and $g(x)$ such that $h(x) = f \circ g(x)$. Recall that $f \circ g(x) := f(g(x))$.
   - (a) $h(x) = \cos \left( \frac{x^2 - 3}{1-x} \right)$
   - (b) $h(x) = \log_2 (x^2 + 1)$
   - (c) $h(x) = \log_3 (1 - x)$

3. Section 3.2 # 8, 28, 48

4. Section 3.3 # 8, 20, 28

5. Section 3.4 # 4, 10, 12, 16

6. (These problems are not to be turned in!)
   - (a) Section 1.2 # 16
   - (b) Section 3.2 # 5, 7, 11, 15, 20, 23, 41, 45
   - (c) Section 3.3 # 1, 3, 5, 13, 21, 25, 29
   - (d) Section 3.4 # 2, 5, 11, 13, 15, 17