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