

Homework 6

Sections 10.1–10.3

Due: 4-20-15

1. Compute the degree 3 Taylor polynomial for $f(x) = \arcsin(x)$ about $x = 0$.
2. Compute the N th degree Taylor polynomial for $f(x) = \frac{3}{x-1}$ about $x = 0$. (Be smart here – try to use something we learned in Chapter 9.)
3. Find the Maclaurin series for $f(x) = \ln\left(\frac{1+x}{1-x}\right)$ (Be sure to simplify!). Hint: Try using the properties of logarithms first!
4. Let $f(x)$ be a function whose degree 3 Taylor polynomial about $x = 2$ can be simplified to

$$P_3(x) = 5 + x - 3x^2 - 5x^3.$$

Is f increasing or decreasing at $x = 2$? Why?