

MATH 186 SECTION 1
HOMEWORK 1
WINTER 2008

Due: Wed Jan 16.

For practice:

Section 4-7: 9, 11, 37, 47

Section 4-9: 7, 9

Section 4-11: 9, 11

Problems to hand in:

Section 4-7: 24, 40, 50, 61(b)

Section 4-9: 6, 12, 14, 16(ac)

Section 4-11: 6, 16, 26(f)

For Extra credit:

Problem A: Let p and q be polynomials. Show that p and q are the same function if and only if p and q have the same degree and the same coefficients.

Problem B: Let p be a polynomial, $\deg p \geq 1$, and $x_0 \in \mathbb{R}$ so that $p(x_0) = 0$. Show that there exists $k \geq 1$ and a polynomial s so that $s(x_0) \neq 0$ and $p(x) = (x - x_0)^k s(x)$ for every $x \in \mathbb{R}$.

Hints:

4-11 Problem 26(f): $y = \sqrt{1 - x^2}$.