

# Homework 1

This homework is due by 9AM on Monday 1/10/11. You are encouraged to work on the problem sets as a group, but each student must hand in their own problem set.

## 1 Manipulating expressions

Simplify these expressions as much as possible. Write your answer in the form of an expanded polynomial with the terms ordered by decreasing powers of  $x$  (see Workshop 1, section 2 for example)

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$$-[2x(x-1) + 1 - x^2] + [-2(2-x) - (x-3)(x-1)]$$

•

$$3[x^2(-2x-4) - (-4)(2+x(-1-x))] - [2x(-x+2)](x-1)$$

•

$$-3(x+1)(x^2+2x-1) - [5x-2+(x^2-1)x]$$

•

$$-x^2[-1-x^2+2x] - 3[2x(x+1)+x^2-1]$$

## 2 Functions

### The definition of a function

Textbook Questions: Section 3.1: 6, 8, 10, 22 (domain only), 24 (domain only), 30, 32, 38, 44, 52, 56

### The graph of a function

Textbook Questions: Section 3.2: 2, 4, 6, 18, 22, 24

### Techniques in graphing

Textbook Questions: Section 3.4: 2, 4, 6, 8, 10, 18