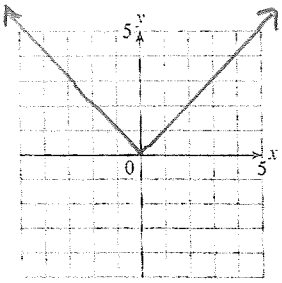
Practice 1.5B:

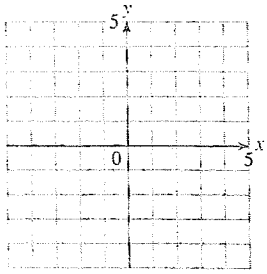
Name _____

1. The graph of $f(x) = |x|$ is below. Sketch the following related graphs.

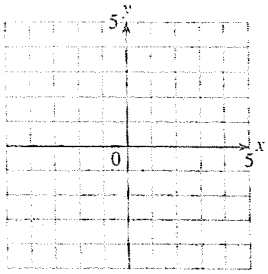
$f(x) = |x|$



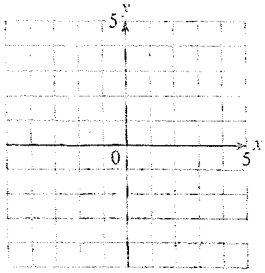
a. $f(x) = |x| - 1$



b. $f(x) = -2|x + 2|$

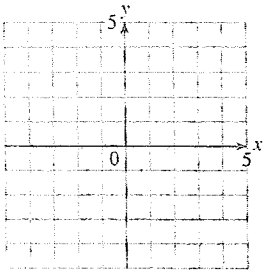


c. $f(x) = \frac{1}{2}|x - 1| + 3$

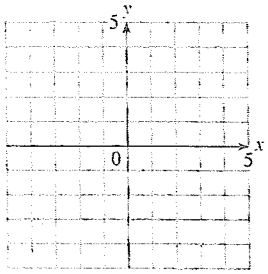


2. Sketch the following polynomial graphs.

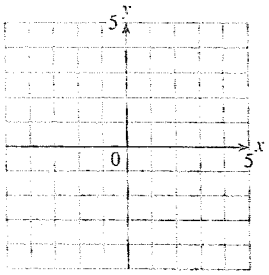
a. $f(x) = -x^2 + 2$



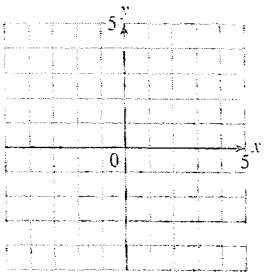
b. $f(x) = 2x^3 + 2x^2$



c. $f(x) = -3x^4 + 2x$

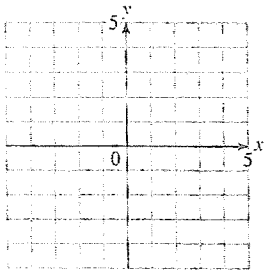


d. $f(x) = 4x^5 - 3x^2 + 2$



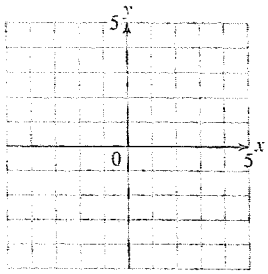
3. Solve the following polynomials with a graphing calculator. Sketch the graphs.

a. $x^2 - x - 12 = 0$



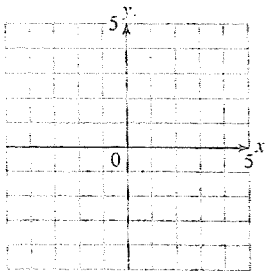
Zeros:

b. $x^3 - x^2 - 6x = 0$



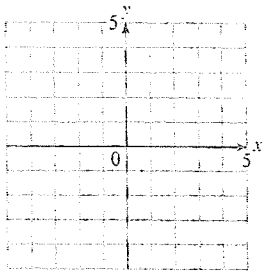
Zeros:

c. $-x^3 - 5x^2 - x + 5$



Zeros:

d. $x^4 - 10x^2 + 9 = 0$



Zeros:

4. Solve by factoring.

a. $x^2 + 14x + 45 = 0$ **b.** $x^3 - 6x^2 - 16x = 0$ **c.** $x^3 + 6x^2 + 11x + 6$ **d.** $x^4 - 20x^2 + 64 = 0$

5. Find a polynomial with the following zeros.

a. $x = 9, -2$ **b.** $x = 0, -1, 5$ **c.** $x = 1, 2, 3$ **d.** $x = \pm 2, \pm 3$