

## Homework 2.3

Determine the end behavior of the polynomial function.

1)  $f(x) = -2x^2 + 3x - 2$

2)  $f(x) = + 2x^2 + 6x^3 - 3x + 3$

Find the x-intercepts of the polynomial function. State whether the graph crosses the x-axis, or touches the x-axis and turns around, at each intercept.

3)  $f(x) = 8x^2 - x^3$

4)  $x^4 + 3x^3 - 88x^2 = 0$

5)  $f(x) = x^2(x - 6)(x - 4)$

6)  $f(x) = (x - 2)^2(x^2 - 25)$

Graph the polynomial function.

$$7) f(x) = x^4 - 9x^2$$

$$8) f(x) = (x + 1)^2(x^2 - 9)$$

$$9) f(x) = x^3 + 6x^2 - x - 6$$

$$10) f(x) = -x^2(x - 3)(x - 1)$$

Find the zeros of the polynomial function.

$$11) f(x) = 5(x + 1)(x + 7)^2$$

$$12) f(x) = x^3 + 9x^2 - x - 9$$