SM3 HW #2-6 (zeroes of nice 3rd degree polys)   Period____

1) (a) write the intercept from equation
   (b) find the x-intercepts.
   $y = 6x^3 - 18x^2 + 12x$

2) (a) write the intercept from equation
   (b) find the x-intercepts.
   $y = 3x^3 - 21x^2 - 64x$

Describe the end behavior of each function.

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

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

5) a) Write the polynomial in intercept form.
   b) find the zeroes of the polynomial
   $f(x) = 5x^3 - x^2 - 5x + 1$

6) a) Write the polynomial in intercept form.
   b) find the zeroes of the polynomial
   $f(x) = 2x^3 + x^2 - 2x - 1$

7) a) Write the polynomial in intercept form. (Hint: common factor 1st.)
   b) find the zeroes of the polynomial
   $f(x) = 3x^4 + x^3 - 3x^2 - x$

8) a) Write the polynomial in intercept form.
   b) find the zeroes of the polynomial
   $f(x) = 5x^4 - x^3 - 5x^2 + x$

Find all zeros.

9) a) Factor (Hint: It looks like $y = x^2 - 25$, the difference of two squares.)
   b) find the zeroes
   $f(x) = x^4 - 25$

10) a) Factor
    b) find the zeroes
    $f(x) = x^4 - 64$

11) Find the equation of a line through: $(-2, -5)$ and $(3, 3)$

12) Find the equation of a line through: $(1, -4)$ and $(-3, -2)$

13) Domain=?
    Range = ?
    $y = -2\sqrt{x + 5} + 4$