

SM3 HW #2-7 (sum cubes, diff cubes, quad. form)

- 1) (a) write the intercept from equation
(b) find the x-intercepts.

$$y = 6x^3 - 18x^2 + 12x$$

- 2) Find the zeroes:

$$y = (7x - 1)(2x + 4)(x^2 + x - 1)$$

- 3) Find the zeroes:

$$y = (x^2 - 4)(x + 1)(x^2 + 4x - 1)$$

- 4) a) Factor the following
b) Find the "zeroes" of the polynomial:

$$y = x^3 + 125$$

- 5) a) Factor the following
b) Find the zeroes of the polynomials

$$y = x^3 - 27$$

- 6) a) Factor the following
b) use the quadratic formula to find the x-intercepts of the quadratic factor

$$y = x^3 + 216$$

Describe the end behavior of each function.

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

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

9) a) Write the polynomial in intercept form.

b) find the zeroes of the polynomial

$$f(x) = 5x^3 - x^2 - 5x + 1$$

10) a) Write the polynomial in intercept form.

b) find the zeroes of the polynomial

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

11) a) Write the polynomial in intercept form.

b) find the zeroes of the polynomial

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

12) 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.

13) a) Factor

b) find the zeroes

$$f(x) = x^4 + 12x^2 + 35$$

14) a) Factor

b) find the zeroes

$$f(x) = x^4 + 13x^2 + 40$$

15) a) Factor

b) find the zeroes

$$f(x) = x^4 - 9x^2 + 14$$

16) a) Factor

b) find the zeroes

$$f(x) = x^4 + 8x^2 + 16$$

17) Find the equation
of the line through:
 $(-2, -2)$ and $(1, 2)$

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