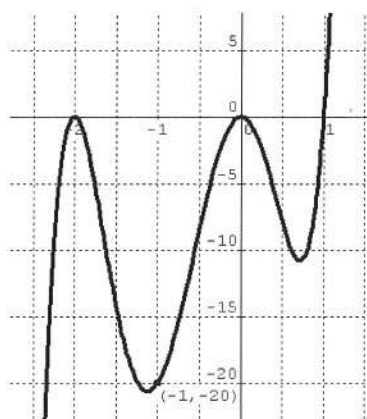1) For the graph below: determine the degree, and if the coefficient of the highest term is positive or negative:

Degree ___6___

Positive or Negative ___—___
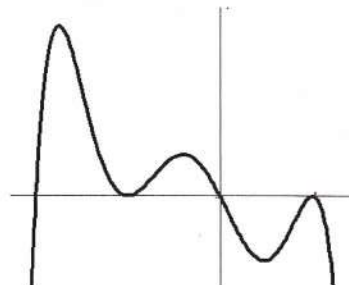
2) Find a *possible* equation for the graph of the polynomial below.
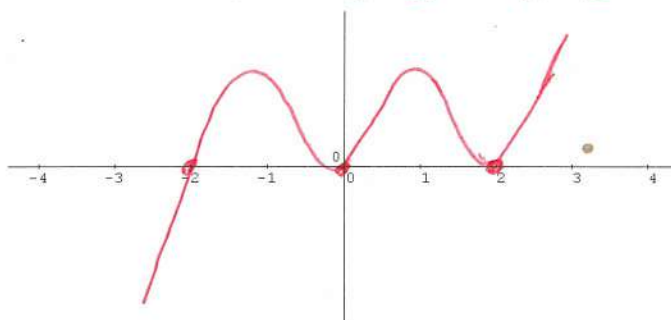
$$y = k(x+2)^2(x)^2(x-1)$$

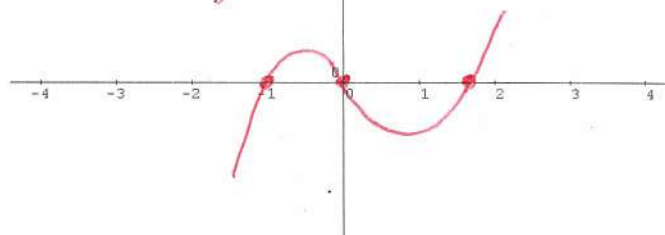$$-20 = k(1)^2(-1)^2(-2)$$

$$k = \frac{-20}{-2} = 10$$

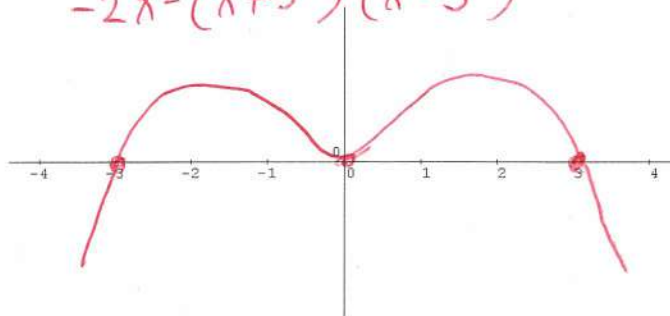$$\boxed{y = 10(x+2)^2(x)^2(x-1)}$$

(-1,-20)

3) Sketch the following polynomials:

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

$x=0 \quad x=2 \quad x=-2$

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

$x(3x-5)(x+1)$

$x=0 \quad x=\frac{5}{3} \quad x=1$

c) $f(x) = -2x^4 + 18x^2$

$-2x^2(x+3)(x-3)$

d) $f(x) = 4x^2 - 15x - 4$

$(4x+1)(x-4)$

$x=-\frac{1}{4} \qquad x=4$