

Identify the important characteristics for each graph. Then write the equation of the graph.

1. a) even or odd? *even*

b) #turns *1* minimum degree *2*

c) LC *negative*

d) zeros and multiplicity

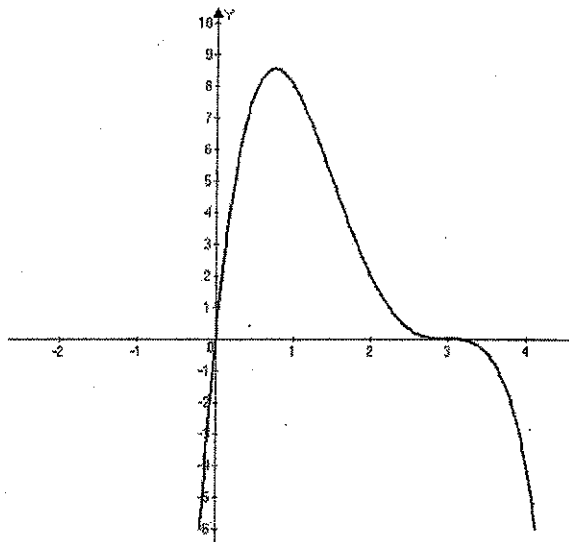
$x=0$ $x=3$

$m. 1$ $m. 3$

e) Equation: $f(x) = -x^4 + 9x^3 - 27x^2 + 27x$

$-(x)(x-3)^3$

$-x(x^3 - 9x^2 + 27x - 27)$



2. a) even or odd? *odd*

b) #turns *2* minimum degree *3*

c) LC *negative*

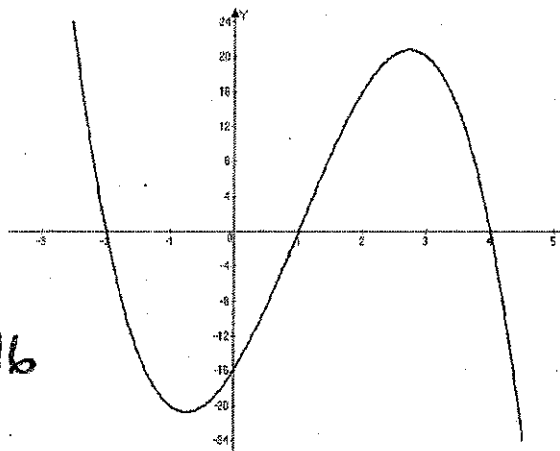
d) zeros and multiplicity

$x=-2$ $x=1$ $x=4$

e) Equation: $f(x) = -2x^3 + 6x^2 + 12x - 16$

$-2(x+2)(x-1)(x-4)$

$(-2x-4)(x^2-5x+4)$



3. a) even or odd? *even*

b) #turns *3* minimum degree *4*

c) LC *negative*

d) zeros and multiplicity

$x=-2$ $x=1$ $x=3$

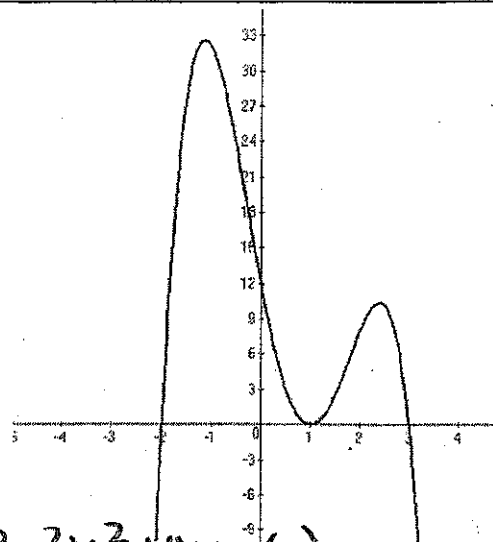
$m. 2$

e) Equation: $f(x) = -2x^4 + 6x^3 + 6x^2 - 22x + 12$

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

$-2(x^2-x-6)(x^2-2x+1)$

$-2(x^4 - 3x^3 - 3x^2 + 11x - 6)$



4. a) even or odd? even

b) #turns 3 minimum degree 4

c) LC positive

d) zeros and multiplicity

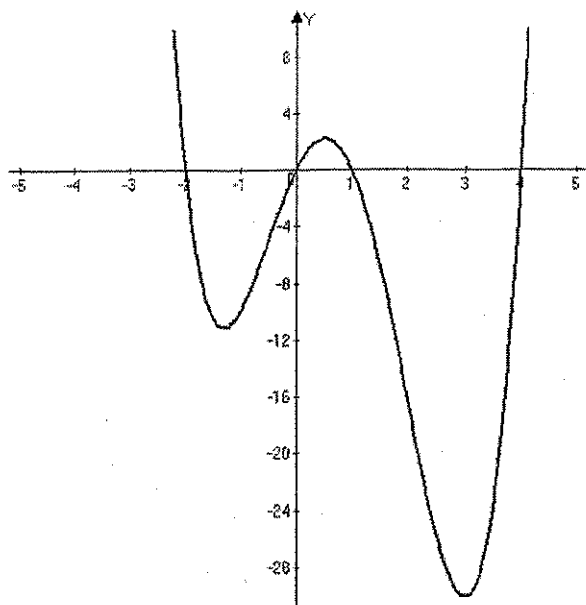
$$x = -2 \quad x = 0 \quad x = 1 \quad x = 4$$

$$m. 1 \quad m. 1 \quad m. 1 \quad m. 1$$

e) Equation: $f(x) = x^4 - 3x^3 - 6x^2 + 8x$

$$x(x+2)(x-1)(x-4)$$

$$(x^2 + 2x)(x^2 - 5x + 4)$$



5. a) even or odd? odd

b) #turns 2 minimum degree 3

c) LC positive

d) zeros and multiplicity

$$x = -2 \quad x = 1$$

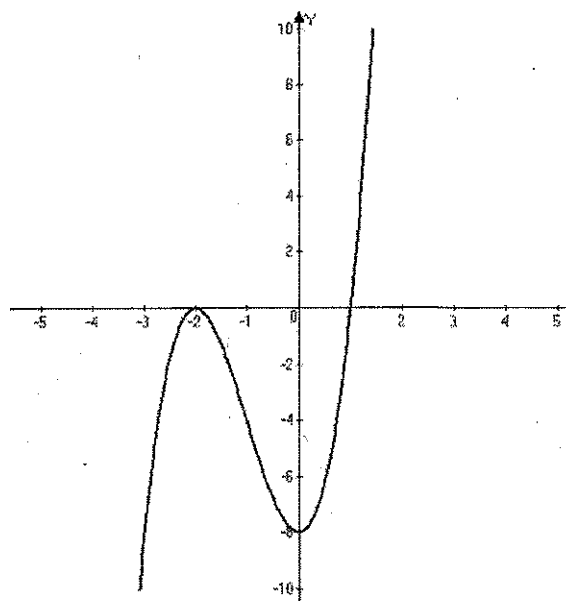
$$m. 2 \quad m. 1$$

e) Equation: $f(x) = 2x^3 + 6x^2 - 8$

$$2(x+2)^2(x-1)$$

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

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



6. a) even or odd? odd

b) #turns 4 minimum degree 5

c) LC positive

d) zeros and multiplicity

$$x = -1 \quad x = 0 \quad x = 2 \quad x = 4$$

$$m. 1 \quad m. 2 \quad m. 1 \quad m. 1$$

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

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

$$(x^3 + x^2)(x^2 - 6x + 8)$$

