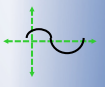
$5x-2y \le 75$

$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$



$S = Pe^{rt}$

$APY = (1+\frac{r}{n})^{n}-1$

Math 1090 ~ Business Algebra

Section 3.4 Polynomial Functions

Objectives:

- Determine the degree of a polynomial function and find the coefficients, the leading coefficient and the constant.
- Write a polynomial function in descending order.
- Sketch a variety of general polynomial functions, even and odd.
- Find the zeros or roots of a polynomial function.

Polynomial Function

$f(x) = a_n x^n + a_{n-1}x^{n-1} + \ldots + a_2x^2 + a_1x + a_0$

Example

$f(x) = 8x^4 - 2x^3 + 3x - 1$

Degree

Coefficients

Leading coefficient

Constant

Graphs

$n = 1$ $n = 2$ $n = 3$ $n = 4$

Ex 1: For these polynomials, write in standard form. State the degree, leading coefficient and show the general shape of each.

a) $f(x) = 4x - 12 - 2x^3 - x^2$

b) $f(x) = 3x^7 - 14x + 3x^2 - 4x^4 - 5$

Ex 2: For these polynomials, answer the following.

a) Degree

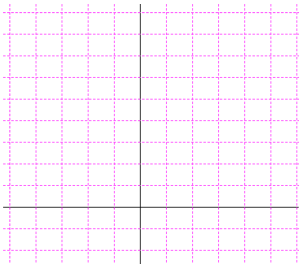
b) zeros

c) y-intercept

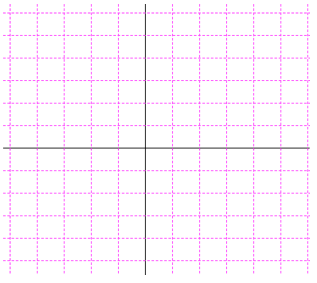
d) x-intercept

e) sketch the graph

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



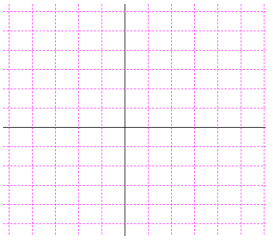
B) $g(x) = 2x^3 - 2x^2 - 4x$



Ex 3: For these piecewise functions, fill in the points and sketch the graph.

a) $f(x) = \begin{cases} 4 & x \geq 3 \\ |x| & -3 \leq x < 3 \\ -1 & x < -3 \end{cases}$

x	-4	-3	0	1	3	4
y						



b) $g(x) = \begin{cases} x+5 & x \geq 1 \\ -2x+8 & x < 1 \end{cases}$

x	y
1	
0	
-1	
2	
3