

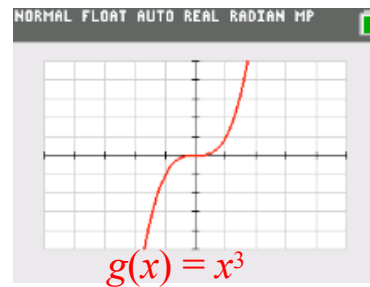
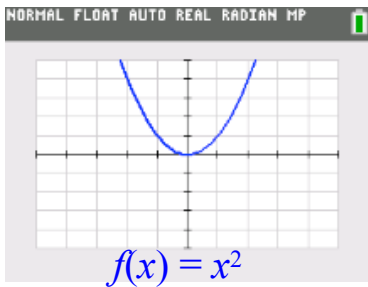
# Advanced Math

2-2

Polynomials of Higher Degree

Even degree polynomials

Odd degree polynomials

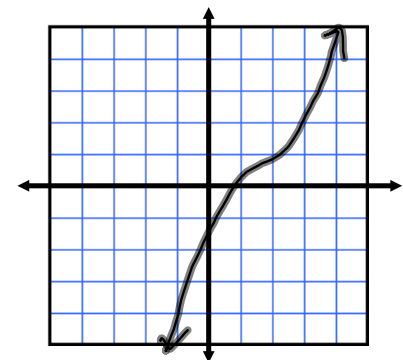
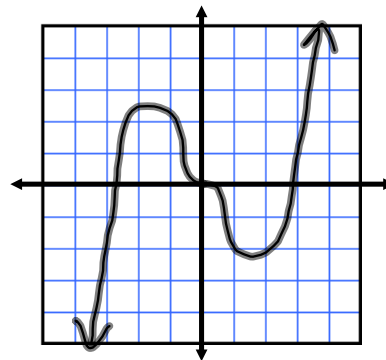
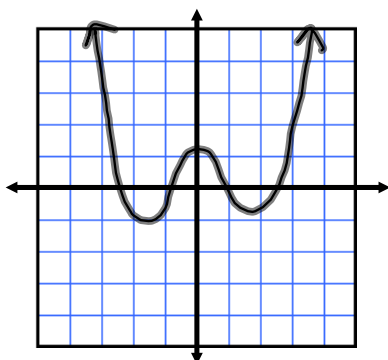
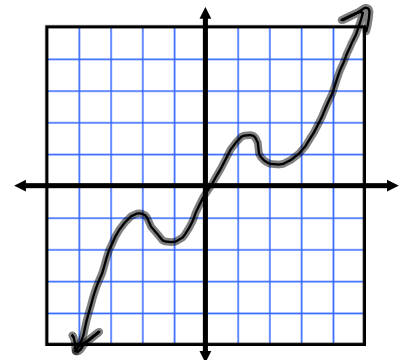
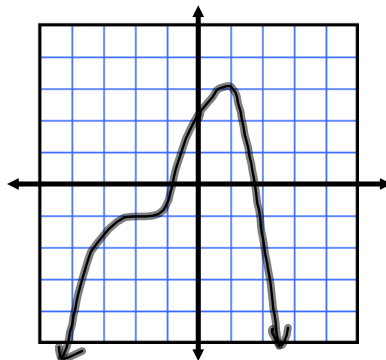
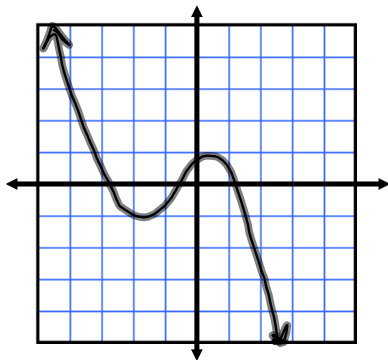


$$P(x) = a_0x^n + a_1x^{n-1} + a_2x^{n-2} + \dots + a_mx^{n-m} + \dots + a_{n-2}x^2 + a_{n-1}x^1 + a_n$$

Leading coefficient test (even) -

Leading coefficient test (odd) -

What is the minimum degree of each polynomial?



Determine the right and left hand behavior of the graph of each polynomial.

13)  $f(x) = \frac{1}{3}x^3 + 5x$

21)  $h(t) = -\frac{2}{3}(t^2 - 5t + 3)$

Find all the real zeros of each function.

33)  $f(x) = 3x^2 - 12x + 3$

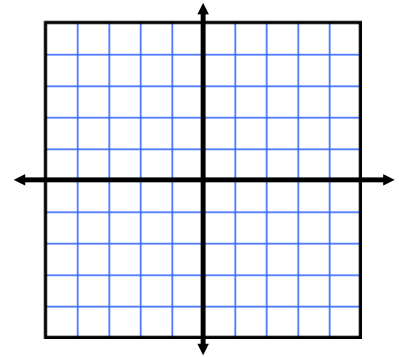
35)  $f(t) = t^3 - 4t^2 + 4t$

Find a polynomial function with the given zeros.

55)  $\{ 1 \pm \sqrt{3} \}$

Sketch the graph of each function. (List all intercepts.)

65)  $f(x) = x^3 - 3x^2$



79) An open box is to be made from a square piece of material, 36 cm on a side, by cutting equal squares from the corners and turning up the sides.

a) Draw a figure to represent this scenario.

b) Use a graphing calculator to complete rows of the chart shown.

Height	Width	Volume
1		
2		

c) Write the volume of the box as a function of the height.

d) What size square corner results in the maximum volume of the box.

Assignment:

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1 - 8 all, 14 - 22 even,

28 - 42 even, 48 - 56 even,

62 - 72 even, 80 - 83 all