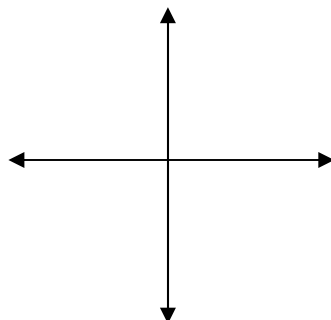


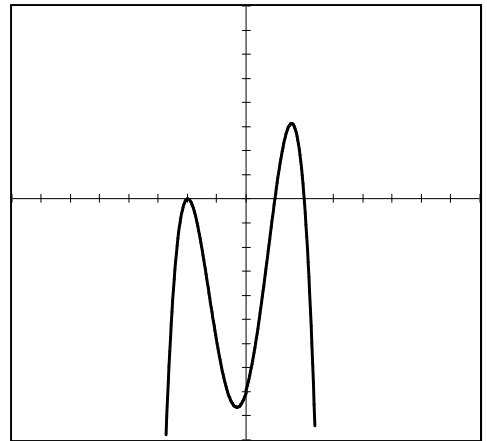
NO CALC!

1. Write the equation of a linear function that satisfies the conditions: $f(3) = 8$ and $f(-1) = 14$.
2. Find the vertex and the axis of symmetry for the graph of $f(x) = 2x^2 - 12x + 7$.
3. What is vertex form of a quadratic equation? _____
4. Write the equation of a parabola that passes through the point $(-2, 4)$ and has a vertex of $(-5, -8)$.
5. Given the polynomial: $f(x) = -4x(x - 2)^3(x + 5)^2$ answer the following questions.
 - a) What is the degree of the $f(x)$?
 - b) What is the leading coefficient of $f(x)$?
 - c) Determine the zeros and state their multiplicity.
 - d) Determine the y-intercept.
 - e) Describe the end behavior.
6. Sketch a graph of the polynomial $p(x) = 2x^3 - 5x^2 - 3x$ by finding intercepts and end behavior.



7. Answer the following questions about the graph shown below.

- a) Is the degree even or odd?
- b) Is the leading coefficient positive or negative?
- c) What are the zeros?
- d) What is the multiplicity of each zero?
- e) Describe the end behavior using limits.



8. One zero of the polynomial $p(x) = x^3 + x^2 - 10x + 8$ is at $x = -4$. Find the other zeros by algebraic methods, then verify your answers by graphing (use calculator to graph).

CALC OK!

9. A box is being created by cutting corners out of a rectangle that measures 10in by 6 in. What size corners should be cut to make a box with volume that is at most 20 cubic inches.

10. Given the vertical motion equation, $s(t) = -16t^2 + v_0 t + s_0$, what is the greatest height an arrow would reach if it is shot straight up with a velocity of 25ft/s and is released at a height of 5 ft.