

Algebra II

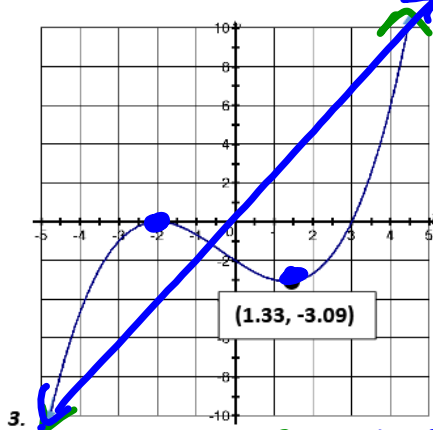
Name _____

Quiz 1 - Graphing Polynomials

Fill in the missing information in the table below.

Function	Leading Coefficient	Degree	Maximum Number of Turning Points	End Behavior
1. $f(x) = 4x^2 + 6x - 5x^7$	-5 neg	7	6	$x \rightarrow -\infty, y \rightarrow +\infty$ $x \rightarrow +\infty, y \rightarrow -\infty$
2. $g(x) = \frac{1}{2}(x-2)^3(x+6)$	pos	4	3	$x \rightarrow -\infty, y \rightarrow +\infty$ $x \rightarrow +\infty, y \rightarrow +\infty$

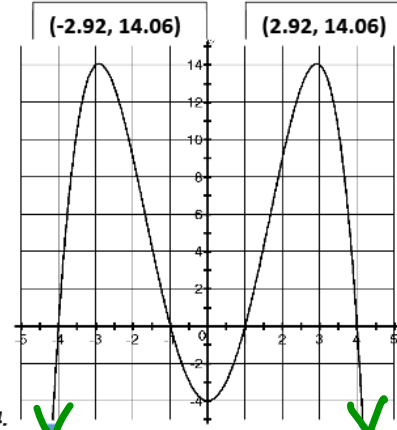
Use the graphs below to find the function's characteristics. Extremes requiring a calculator are labeled for you.



3. Domain: $-\infty < x < \infty$
Range: $-\infty < y < \infty$
 $(-\infty, \infty)$ $(-\infty, \infty)$

Sign of L.C.: pos
Least Possible Degree: 3
Zeros: $x = -2, 3$
Y-Int: $(0, -2)$

Increase: $(-\infty, -2) \cup (1.33, \infty)$
Decrease: $(-2, 1.33)$



4. Domain: $-\infty < x < \infty$
Range: $-\infty < y \leq 14.06$
 $(-\infty, \infty)$ $(-\infty, 14.06]$

Sign of L.C.: neg
Least Possible Degree: 4
Zeros: $x = -4, -1, 1, 4$
Y-Int: $(0, -4)$

Increase: $(-\infty, -2.92) \cup (0, 2.92)$
Decrease: $(-2.92, 0) \cup (2.92, \infty)$

Fill in the information below and sketch a graph of the polynomial.

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

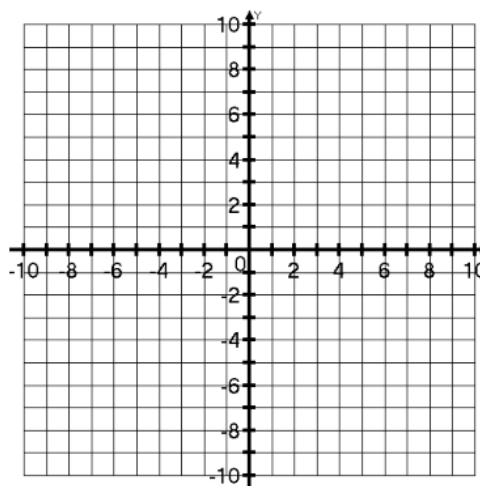
Degree:

Sign of L.C.:

End Behavior:

Zeros and Multiplicity:

Y-Intercept:



7. $f(x) = \frac{1}{8}(x - 2)^3(x^2 + 6x + 8)$

Factored Form:

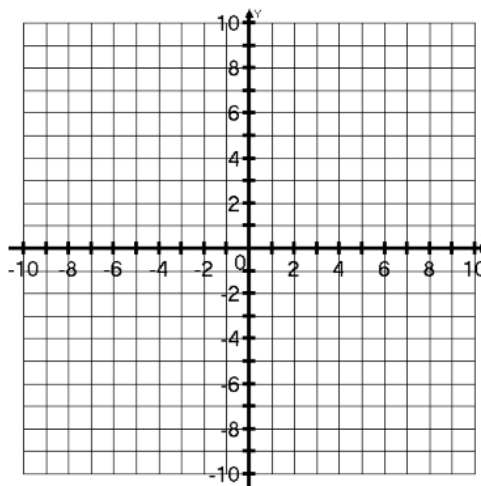
Degree:

Sign of L.C.:

End Behavior:

Zeros and Multiplicity:

Y-Intercept:



- A. Solve the following polynomial by factoring and graph the function.
- B. Plot the x-intercepts, y-intercepts, and vertices and sketch a smooth curve with arrows.
- C. Label the values of the vertices to 2 decimal places.

1. $f(x) = -5x^4 + 17x^3 + 39x^2 - 153x + 54$
 $f(x) = -(x - 3)(5x^3 - 2x^2 - 45x + 18)$

Factored Form: _____

Zeros: _____

X-Intercepts:

Y-Intercept:

Maxima:

Absolute:

Relative:

Minima:

Absolute:

Relative:

