Algebra II Unit 3 Review **Name: _____**

Determine the maximum number of roots each function has.

1. $-x^5 - 2$

2. $x^3 + 5x^2 + 2x - 8$

List all the *possible* roots for the following polynomials.

3. $6x^4 + 8x + 4x + 2$

4. $3x^5 - 4x^3 + 8x + 7$

Sketch the possible graph for the polynomial. State whether it is an odd or even polynomial.

5. $7x^8 + 2x^3 - 5x - 8$

6. $-5x^7 + 3x^4 - 2x + 6$

Find the depressed polynomial using synthetic division.

7. $(x^2 + 8x + 10) \div (x - 2)$

8. $(3x^5 - 4x^3 + 8x + 7) \div (x + 1)$

Find all the zeros of each function.

9. $2x^3 + x^2 - 11x - 10 = 0$

10. $x^3 - 3x^2 + 2x - 6 = 0$

11. $4x^3 - 13x^2 + 7x + 2 = 0$

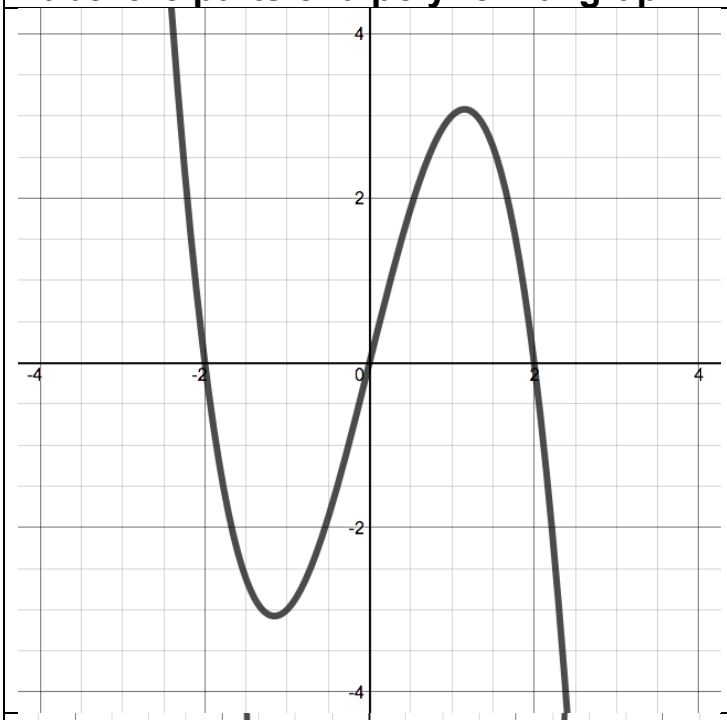
Write the simplest polynomial function with the given zeros.

12. $-2, 1, and\ 5$

13. $-2, 5-2i$

14. $5, \sqrt{3}$

Label the parts of a polynomial graph.



15.

Domain:

Range:

Interval of Increase:

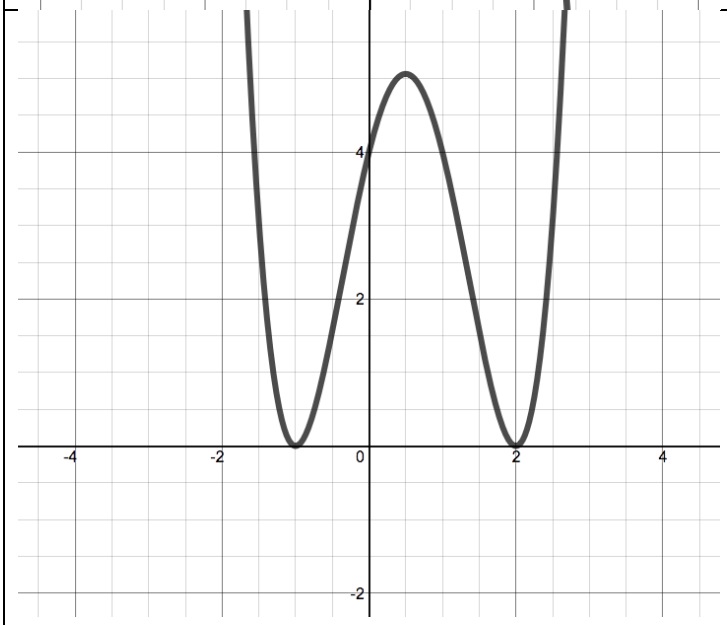
Interval of Decrease:

Max (local or absolute):

Minimum (local or absolute):

x-intercepts:

y-intercepts:



16.

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