Lesson 5.7 Worksheet

Name: _____

Identify the number of solutions or zeros.

1.) $f(x) = 5x^3 - 6x^2 + 2x - 3$

2.) $g(x) = 8x^6 - 3x^4 - 11x^3 - 2x^2 + 4$

3.) $9t^7 - 14t^3 + 4t - 1 = 0$

4.) $0 = -x^{12} + 7x^8 + 5x^4 - 8x + 6$

Find all zeros of the polynomial function.

5.) $f(x) = x^4 - 6x^3 + 7x^2 + 6x - 8$

6.) $g(x) = x^4 - 9x^2 - 4x + 12$

7.) $f(x) = x^4 + 15x^2 - 16$

8.) $g(x) = x^4 - 2x^3 - 3x^2 + 2x + 2$

Write a polynomial function _f_ of least degree that has rational coefficients, a leading coefficient of 1, and the given zeros.
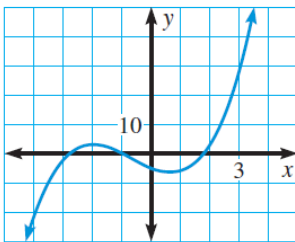
9.) $-2, 1, 3$

10.) $2, -i, i$

11.) $5, 5, 4 + i$

12.) $-4, 1, 2 - \sqrt{6}$

Determine the number of positive real zeros, negative real zeros, and imaginary zeros for the function with the given degree and graph. *Explain* **your reasoning.**
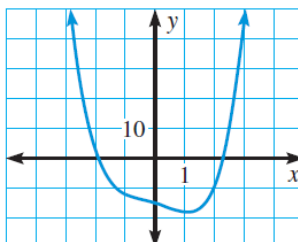
13.) Degree: 3

+ real zeros:

− real zeros:

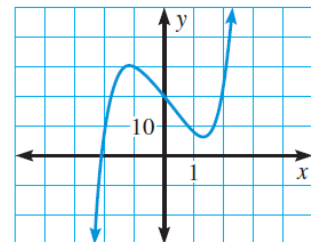imaginary zeros:

explanation:

14.) Degree: 4

+ real zeros:

− real zeros:

imaginary zeros:

explanation:

15.) Degree: 5

+ real zeros:

− real zeros:

imaginary zeros:

explanation: