

Name:

Date:

Period:

Assessment R1

1. (4 points) A polynomial $p(x)$ has a zero of -3.

Explain what the zero tells you about the factors, graph, or equation of the polynomial. Be specific!

2. (3 points) Show that 4 is a zero of the following polynomial:

$$2x^3 - 3x^2 - 17x - 12$$

3. (2 points each) Write a polynomial function with the following zeroes in factored form

a) The zeros are -2 and 1.

b) The zeros are -1, 2, and 7.

4. (4 points) If $f(x) = x^3 - 5x^2 - 41x + 45$ and $f(-5) = 0$, then find all of the zeros of $f(x)$ algebraically.

Factor the following completely:

5. (3 points) $(x + 2)^2 - 3(x + 2) - 10$

6. (3 points) $x^3 + x^2 + 7x^2 + 7x + 12x + 12$

7. (3 points) $(a - 3)^2 - (c + 1)^2$

8. (4 points) Solve the following by factoring:

$$x^3 - 2x^2 - 9x + 18 = 0.$$

(2 points) Draw a rough sketch of the graph to indicate that you are correct (you may use your calculator)