Pre-Calculus Name _____
Quiz Review 2.5 Per. _____

1) Find a polynomial of a degree n that has the given zero(s). Give the equation in standard form.
   a) x = 0, 4, 2i

2) Divide $p(x) = 2x^4 + 7x^3 - 4x^2 - 27x - 18$ by $x^2 + x - 6$ and state if it is a factor of the polynomial. If it is a factor, find the remaining zeros and sketch the graph.

3) Divide $x^3 - 5x^2 - 11x + 8$ by $x + 2$ and state if it is a factor of the polynomial. If it is a factor, find the remaining zeros and sketch the graph.

4) Use synthetic or long division to show that $\sqrt{3}$ is a zero of the polynomial $f(x) = x^3 - 2x^2 - 3x + 6$. Find the remaining zeros.

5) Show that the given zero is a zero then find the remaining zeros.

$p(x) = x^4 - 2x^3 - 14x^2 + 22x + 33$ Given $x = \sqrt{11}$

6) Use the quadratic formula to solve $x^2 + 6x + 10 = 0$

7) You need to use a graphing calculator to find one zero or more and then use synthetic division to show x is a solution of the polynomial equation. Use the appropriate technique to find the rest of the zeros. $f(x) = x^3 - 3x^2 + 13x - 11$

8) You need to use a graphing calculator to find one zero or more and then use synthetic division to show x is a solution of the polynomial equation. Use the appropriate technique to find the rest of the zeros. $f(x) = 3x^4 + x^3 - 3x^2 + 9x - 10$

9) If 3 + 2i is a zero of a function *g(x)*, what is another zero of *g(x)*? Why?

10) Find a polynomial with integer coefficients that has zeros 4, 3i. Write your answer in standard form.