Algebra 2 Name_____

HW #1: Fundamental Theorem of Algebra

State the possible number of real and imaginary zeros for each function.

1) $y = x^5 + 5x^4 - x^3 - 5x^2 - 2x - 10$

2) $y = x^4 - 6x^2 - 27$

3) $y = x^3 - 5x^2 - x + 5$

4) $y = x^2 - x - 6$

Find all zeros.

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

6) $f(x) = (x^2 + 5)(x^2 - 7)$

7) $f(x) = (x^2 - 5)(x^2 + 7)$

8) $f(x) = (x^2 + 8)(x^2 + 7)$

9) $f(x) = (x^2 + 4)(x^2 + 6)$

10) $f(x) = (x + 4)(x^2 - 5)$