

Name : \_\_\_\_\_ Score : \_\_\_\_\_

Teacher : \_\_\_\_\_ Date : \_\_\_\_\_

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### Analyzing and Solving Polynomial Equations

Find the number of complex roots, the possible real and imaginary roots, the possible number of positive and negative real roots, and the possible rational roots.

1)  $x^4 - 2x^3 - 2x - 1 = 0$

2)  $x^2 + 2 = 0$

3)  $x^3 - 3x^2 + 25x - 75 = 0$

4)  $x^5 - x^4 - 12x^3 + 14x^2 + 20x - 24 = 0$

5)  $x^6 + 4x^5 - 4x^4 - 28x^3 - 11x^2 + 40x + 30 = 0$

6)  $x^3 - 11x - 20 = 0$

