Algebra II

Theorem -

How many solutions do each of the following have?
$$P(x) = x^3 + 5x^2 - 7x + 1$$

$$P(x) = x^{12} - 3x^4 + 8x$$

$$P(x) = 4 + 3x^5 - 7x^6 + 11x^9 - 131x^2$$

Conjugate Root Theorem -

All but one of the equations solutions are given. Find the remaining root.   (pg 380)

5) $x^3 - 3x^2 + 4x - 12$ { 3, 2i,   }

Find a cubic equation with integral coefficients that has the given roots.

1) { -1, 5i,   }

A root of the equation is given. Solve the equation.

9) $x^3 + x - 10 = 0$ { -1+2i,   }

<u>Descartes' Rule of Signs</u> -

*1) $3x^5 - 4x^3 - 7x^2 + 11x + 9 = 0$

*2) $6x^6 + 7x^5 - x^4 + 2x^2 - x - 1 = 0$

List all the possibilities for the nature of the roots of each equation.

13) $x^4 + 3x^2 - 4 = 0$

19) $x^5 - x^3 - x^2 + x - 2 = 0$

Assignment:
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  1-24 all