

Answers to quiz

1. Solve the following equation:

$$x^4 + x^3 - 7x^2 - x + 6 = 0$$

Answer. $x = -1$, or $x = -3$, or $x = 1$, or $x = 2$

□

2. List all possible rational solutions of the following equation:

$$6x^3 - 3x^2 + 5x - 10$$

Answer. $\pm\{1, 2, 5, 10, \frac{1}{2}, \frac{5}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{3}, \frac{10}{3}, \frac{1}{6}, \frac{5}{6}\}$

□

3. Find a third degree polynomial with leading coefficient $a_3 = 5$ that has zeroes at $x = -1$, $x = 2$, and $x = 3$.

Answer. $5x^3 - 20x^2 + 5x + 30$

□

4. Use Descartes' Rule of Signs to determine the possible numbers of positive and neagative real zeroes of the equation:

$$2x^3 + 3x^2 - 14x - 21 = 0$$

Answer. The equation has 1 positive solution and 2 or 0 negative solutions.

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