

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the following polynomial equations:

(a) $x^3 - 3x^2 - 4x + 12 = 0$.

(b) $6x^3 = 13x^2 + 5x$.

2. (a) Simplify the following rational expression

$$\frac{x^3 + 4x^2 - 21x}{x^4 - 27x} =$$

- (b) Perform the operation and simplify:

$$\frac{x^3 + x^2 - 20x}{x^2 + 2x - 15} \div \frac{x^2 - 16}{x^3 - 27} =$$