

Unit 4: Polynomial Equations and Inequalities

4.1 Solving Polynomial Equations *PART 1*



Math Learning Target:

"By the end of next class, I can solve any polynomial equation."

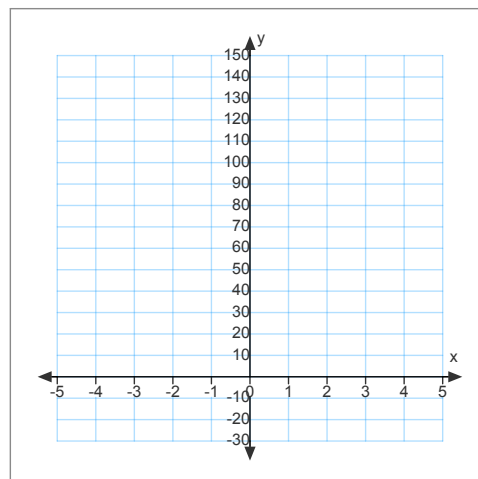
Ex. 1: Find the point(s) of intersection of these polynomial functions algebraically:

$$y = 2x^4 + x^3 + x^2 - 7x - 20$$

$$y = x^4 - 3x^3 - x^2 + 6x + 10$$

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$$y = x^4 - 3x^3 - x^2 + 6x + 10$$



Does $2 = 1$?

Step 1. Let a and b be equal. Note: assume a and b are not zero.

Step 2. Multiply the equation by a .

Step 3. Subtract the equation by b^2 .

Step 4. Factor the equation

Step 5. Divide the equation by $(a - b)$.

Step 6. Remember Step 1?

Step 7. Divide the equation by a .

Below is an example on the left of where the above misconception has been demonstrated by students:

Solve: $x^2 - 4x = 0$

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Ex. 2: Solve $\{x \in \mathbb{R}\}$.

a) $2x^3 - 240x = 0$

b) $(x+2)(10x^2 - 19x - 15) = 0$

Today's Entertainment: p. 204 #1, 2, 3, 5, 6.

**For #2 you do not have to verify using technology.*

Also for #2d one of the roots is -3 (not 3)