

Algebra 1

Topic: Solving Polynomial Equations in Factored Form

Instructions

Solve the following polynomial equations. Show all steps clearly and check your solutions.

Practice Problems

1. Solve the following polynomial equations:

- (i) (x+3)(x-5) = 0(iv) (3x+5)(x-1) = 0(v) (x+4)(x-6) = 0
- (ii) (2x+1)(x-4) = 0
- (iii) (x-2)(x+7) = 0(vi) (x+2)(x-3) = 0

2. Solve the following equations by factoring:

(i) $x^2 - 4 = 0$	(iv) $x^2 - 10x + 25 = 0$
(ii) $x^2 - 9 = 0$	(v) $x^2 - 7x + 12 = 0$
(iii) $x^2 + 3x = 0$	(vi) $x^2 - 16x + 64 = 0$

3. Factor the polynomial:

- (i) $5z^2 + 45z$ (iii) $2a^4 + 8a$ (iv) $5n^6 + 2n^5$ (ii) $6d^2 - 21d$
- 4. Solve the following polynomial equations with multiple factors:

- (i) (x-2)(x+5)(x-3) = 0(ii) (2x+1)(x-4)(x+6) = 0(iv) (3x-2)(x+4)(x-1) = 0(v) (x+4)(x-7)(x+2) = 0
- (iii) (x+1)(x-5)(x+3) = 0 (vi) (x-3)(x+2)(x-1)(x+5) = 0

Multiple-Choice Questions

1. What are the solutions to the equation (x - 1)(x + 5) = 0?

A. $x = 1$ and $x = -5$	C. $x = 1$ and $x = 5$
B. $x = -1$ and $x = 5$	D. $x = -1$ and $x = -5$

2. What are the solutions to the equation (x+2)(x-3) = 0?

A. x = -2 and x = 3C. x = 2 and x = 3B. x = 2 and x = -3D. x = -2 and x = -3

3. What are the solutions to the equation (x - 4)(x + 5) = 0?

А.	x = 4 and $x = -5$	C. $x = 4$ and $x = 5$
В.	x = -4 and $x = 5$	D. $x = -4$ and $x = -5$

4. What are the solutions to the equation (x + 1)(x - 7) = 0?

- A. x = 1 and x = -7C. x = 1 and x = 7B. x = -1 and x = 7D. x = -1 and x = -7
- 5. What are the solutions to the equation (x+3)(x-4) = 0?
 - A. x = -3 and x = 4C. x = -3 and x = -4B. x = 3 and x = -4D. x = 3 and x = 4

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