

Solving Quadratic Equations by Factoring Part 2

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11:45 AM

PRE-CALCULUS 11 QUADRATIC EQUATIONS SOLVING QUADRATIC EQUATIONS BY FACTORING PART 2

A. Definitions

1. **factor:** terms or expressions that when multiplied form a product.
2. **quadratic equation:** an equation that can be written in the form: $ax^2 + bx + c = 0$.
Where a, b and c are constants and $a \neq 0$.
Quadratic equations usually have 2 answers.

B. Solving Quadratic Equations

Solve the following equations. You do not need to provide a check.

1) $x^2 - 2x - 11 = 4$

$x^2 - 2x - 15 = 0$

$(x - 5)(x + 3) = 0$

$x - 5 = 0$ $x + 3 = 0$

$x = 5$ $x = -3$

$x = 5, -3$

2) $2x^2 - 5x - 9 = x^2 + 3x$

$x^2 - 8x - 9 = 0$

$(x - 9)(x + 1) = 0$

$x - 9 = 0$ $x + 1 = 0$

$x = 9$ $x = -1$

$x = 9, -1$

5) $8x^2 - 3x + 4 = 2x^2 + 2x + 3$
 ~~$-2x^2 - 2x - 3$~~ ~~$-2x^2 - 2x - 3$~~

ac

$\begin{matrix} 6 \\ (-3) \times (-2) \\ 6 \\ -5 \end{matrix}$

$$6x^2 - 5x + 1 = 0$$

$$(6x^2 - 3x)(-2x + 1) = 0$$

$$3x(2x - 1) - 1(2x - 1) = 0$$

$$(3x - 1)(2x - 1) = 0$$

$$3x - 1 = 0 \qquad 2x - 1 = 0$$

$$\frac{3}{3}x = \frac{1}{3} \qquad \frac{2}{2}x = \frac{1}{2}$$

$$x = \frac{1}{3}, \frac{1}{2}$$

6) $(3x - 1)(x + 4) = x^2 + 4x + 11$
 $3x^2 + 12x - x - 4 = x^2 + 4x + 11$
 ~~$-x^2 - 4x - 11$~~ ~~$-x^2 - 4x - 11$~~

ac

$\begin{matrix} -30 \\ (10) \times (-3) \\ 7 \\ 6 \end{matrix}$

$$2x^2 + 7x - 15 = 0$$

$$(x + \frac{10}{2})(x - 3) = 0$$

$$(x + 5)(2x - 3) = 0$$

$$x + 5 = 0 \qquad 2x - 3 = 0$$

$$\frac{x}{1} + \frac{5}{1} = \frac{0}{1} \qquad \frac{2}{2}x - \frac{3}{2} = \frac{0}{2}$$

$$x = -5, \frac{3}{2}$$

Assignment: Solving Quadratic Equations by Factoring Assignment #1 - 14

PRE-CALCULUS 11
QUADRATIC EQUATIONS
SOLVING QUADRATIC EQUATIONS BY FACTORING ASSIGNMENT

A. Solve the following equations. You do not need to provide a check.

1) $x^2 + 5x + 6 = 0$

2) $x^2 - 16 = 0$

3) $x^2 - 6x - 16 = 0$

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

5) $2x^2 + 3x + 1 = 0$

6) $3x^2 - 108 = 0$

7) $4x^2 - 16x + 15 = 0$

8) $x^2 - 5x - 30 = 6$

9) $3x^2 - 4x - 20 = x^2 + 2x$

10) $4x^2 + 4x + 3 = 3x^2 - 4x - 4$

11) $2x^2 + 3x = 2 - 2x - x^2$

12) $6x^2 + 10x + 2 = 2x^2 + 2x - 1$

13) $(x+2)(x-2) = -1 - 2x$

14) $7x(x+1) - 3x = (x+2)(x+1)$

Answers

1) $x = -2, -3$

2) $x = \pm 4$

3) $x = 8, -2$

4) $x = 1, \frac{3}{4}$

5) $x = -1, -\frac{1}{2}$

6) $x = \pm 6$

7) $x = \frac{3}{2}, \frac{5}{2}$

8) $x = 9, -4$

9) $x = 5, -2$

10) $x = -1, -7$

11) $x = -2, \frac{1}{3}$

12) $x = -\frac{1}{2}, -\frac{3}{2}$

13) $x = 1, -3$

14) $x = \frac{1}{2}, -\frac{2}{3}$