

Solving Quadratic Equations, Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}; ax^2 + bx + c = 0$$

By use of the quadratic formula solve each of the following equations. Assume $R = \{\text{all real numbers}\}$. Label a, b, and c in each problem.

1. $x^2 - 8x + 15 = 0$

2. $x^2 + 7x - 8 = 0$

3. $x^2 + x - 42 = 0$

4. $x^2 - 11x + 30 = 0$

5. $2x^2 - x - 1 = 0$

6. $6x^2 - x - 15 = 0$

7. $4x^2 - 23x = 6$

8. $15x^2 - 16x = 15$

9. $8x^2 - 6x = -1$

10. $3x^2 - 20x = 7$

11. $x^2 - 4x + 1 = 0$

12. $x^2 + 10x + 21 = 0$

13. $4x^2 - 12x + 7 = 0$

14. $9x^2 + 6x - 4 = 0$

15. $x^2 + 10x + 19 = 0$

16. $3x^2 + 12x + 8 = 0$

17. How was the Quadratic Formula derived?