

Quadratic Equations II

Solve the following quadratic equations by getting them equal to zero and factorising. Start the questions in class and finish for prep (all under the heading ‘Quadratic Equations II’). They start simple and get harder. Remember: focus on the x^2 s, then the constant, then the x .

1. $x^2 + 4x = 5$. $x = -5$ or $x = 1$

2. $x^2 = 8x - 12$. $x = 6$ or $x = 2$

3. $x^2 = 7x + 8$. $x = -1$ or $x = 8$

4. $2x^2 = 20 + 6x$. $x = 5$ or $x = -2$

5. $x^2 + x = 42$. $x = -7$ or $x = 6$

6. $x^2 = 49$. $x = -7$ or $x = 7$

7. $x^2 = 6x + 91$. $x = 13$ or $x = -7$

8. $2x + 3 = x^2$. $x = 3$ or $x = -1$

9. $2x^2 + x = 3$. $x = 1$ or $x = -\frac{3}{2}$

10. $3\pi x^2 = 4\pi + \pi x$. $x = -1$ or $x = \frac{4}{3}$

11. $14 = 2x^2 + 3x$. $x = 2$ or $x = -\frac{7}{2}$

12. $40x^2 + 30x = 70$. $x = 1$ or $x = -\frac{7}{4}$

13. $18x^2 - 15x = 42$. $x = 2$ or $x = -\frac{7}{6}$

14. A right angled triangle has lengths x , $x + 1$ and $x + 2$. By considering Pythagoras’ Theorem on the triangle, find x . [Remember; lengths on a triangle must be positive.]

$x = 3$

15. How many squares are there on a chess board? [The answer is *not* 64. Think] 204