

## Equazioni intere di secondo grado

**Risolvi le seguenti equazioni di secondo grado.**

1.  $x^2 + 7x + 12 = 0$

$$[x_1 = -4, x_2 = -3]$$

2.  $2(x+1)x - 4x + \frac{1}{2} = 0$

$$[x_1 = x_2 = \frac{1}{2}]$$

3.  $3x^2 - 2(x-1)(x+2) = 10 - x$

$$[x_1 = -2, x_2 = 3]$$

4.  $(x-1)x + \frac{1}{2}(x+2)(2x+1) = x\frac{x-2}{2}$

$$[x_1 = -1, x_2 = -\frac{2}{3}]$$

5.  $x^2 + \frac{x-2}{3} + (x+1)(x-3) = 0$

$$[x_1 = -1, x_2 = \frac{11}{6}]$$

6.  $\frac{x}{1+\sqrt{2}} - \frac{2x}{1-\sqrt{2}} = x^2$

$$[x_1 = 0, x_2 = 1 + 3\sqrt{2}]$$

7.  $(x - \frac{1}{4})(2x + 3) = (3x - 1)(3 - 2x)$

$$[x_1 = \frac{1}{2}, x_2 = \frac{9}{16}]$$

8.  $x^2 + (x-1)(x+1) = \frac{x^2 - 2(x+4) + 3}{2}$

*[nessuna soluzione reale]*

9.  $4x(x - \frac{1}{2}) + 4[(x+1)(x-1) - x] = 2(x-1) - 4$

$$[x_1 = x_2 = \frac{1}{2}]$$

10.  $x^2 + \frac{3}{4}(x-2)\frac{4x^2+2x+1}{3} - x(x+2)(x-1) + 2 = 0$

$$[x_1 = -\frac{2}{3}, x_2 = \frac{3}{2}]$$

11.  $x + \frac{x}{2} + \frac{1 - \frac{x^2}{2} + x}{\frac{3}{2}} = \frac{3x+4}{6}$

$$[x_1 = 0, x_2 = 5]$$

$$12. (x - \sqrt{3})(2x - 3\sqrt{3}) + (x - \sqrt{3})(x + \sqrt{3}) = 0$$

$$[x_1 = \frac{2\sqrt{3}}{3}, x_2 = \sqrt{3}]$$

$$13. x^2 - 3\pi x + \frac{5}{4}\pi^2 = 0$$

$$[x_1 = \frac{\pi}{2}, x_2 = \frac{5\pi}{2}]$$

$$14. \frac{4}{3} - x + 2x^2 - x\left(\frac{x-1}{2} - \frac{1}{3}\right) = 0$$

[nessuna soluzione reale]

$$15. \frac{\frac{3}{4}x^2 + \frac{7}{4}x - 1}{\left(-\frac{1}{2}\right)^2} + (x - 1)x = 0$$

$$[x_1 = -2, x_2 = \frac{1}{2}]$$

$$16. x^2 + 4\sqrt{6}x + (x^2 + 1)(2x^2 + 3) = 2x^2(x + 1)(x - 1)$$

$$[x_1 = x_2 = -\frac{\sqrt{6}}{4}]$$

$$17. \left(\frac{x}{2}\right)^2 - \frac{1}{(-2)^3}(-x)^2 + \frac{x^2 - 2x - \frac{1}{2}}{4} = 0$$

$$[x_1 = -\frac{1}{5}, x_2 = 1]$$

$$18. \frac{2}{3}(x - 2)(x + 3) - \frac{1}{3}(x - 1)(x + 5) - x^2 = 0$$

[nessuna soluzione reale]

$$19. (2x - 1)^2 - (x + 2)^2 = 0$$

$$[x_1 = -\frac{1}{3}, x_2 = 3]$$

$$20. (x + 1)(x + 2)(x + 3) = (x - 1)(x - 2)(x - 3) - 24x$$

$$[x_1 = x_2 = -1]$$