

## EQUAZIONI NUMERICHE INTERE

$$1. \quad \frac{x-1}{3} + 2 = \frac{x-5}{2}$$

$$2x - 2 + 12 - 3x + 15 = 0 \quad -x = -25 \quad x = 25$$

$$2. \quad \frac{1}{9}(3-2x) - \frac{1}{4}(x-1) = x+5$$

$$12 - 8x - 9x + 9 = 36x + 180 \quad -53x = 159 \quad x = -3$$

$$3. \quad \frac{3x-2}{3} - \frac{6x+1}{5} = \frac{x-3}{2} - x - \frac{5}{3}$$

$$30x - 20 - 36x - 6 = 15x - 45 - 30x - 50 \quad 9x = -69 \quad x = -\frac{23}{3}$$

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

$$3x - 3x + \frac{21}{4} = \frac{3}{2}x - 1 - \frac{3}{2}x \quad \frac{21}{4} = -1 \quad \text{imp.}$$

$$5. \quad (2x^2 - x + 1)^2 = (2x^2 - 1)^2 - x^2(4x - 9)$$

$$4x^4 + x^2 + 1 - 4x^3 + 4x^2 - 2x = 4x^4 - 4x^2 + 1 - 4x^3 + 9x^2 - 2x = 0 \quad x = 0$$

$$6. \quad \frac{x-5}{4} + \frac{2-5x}{3} = 1-x$$

$$3x - 15 + 8 - 20x - 12 + 12x = 0$$

$$-5x = 19 \quad x = -\frac{19}{5}$$

$$7. \quad 8 + \frac{6x-5}{2} - \frac{5}{2}(1-3x) = 8(1+x) + \frac{5(x-2)}{2}$$

$$16 + 6x - 5 - 5 + 15x = 16 + 16x + 5x - 10 \quad \text{ind.}$$

$$8. \quad \frac{1}{2} \left[ \frac{2}{5} \left( \frac{5}{6}x - \frac{5}{6} \right) + \frac{2}{5} \right] - \frac{3}{2} = \frac{3}{10}x + \frac{1}{3}$$

$$\frac{1}{2} \left[ \frac{1}{3}x - \frac{1}{3} + \frac{2}{5} \right] - \frac{3}{2} - \frac{3}{10}x - \frac{1}{3} = 0$$

$$\frac{1}{6}x - \frac{1}{6} + \frac{1}{5} - \frac{3}{2} - \frac{3}{10}x - \frac{1}{3} = 0$$

$$5x - 5 + 6 - 45 - 9x - 10 = 0$$

$$-4x = 54 \quad x = -\frac{27}{2}$$

$$9. \quad 2x + \frac{17-x}{2} = \frac{8-3x}{3} + \frac{25}{3}$$

$$12x + 51 - 3x = 16 - 6x + 50$$

$$15x = 15$$

$$x = 1$$

$$10. \quad \frac{x+5}{7} = \frac{x}{3} + 1$$

$$3x + 15 = 7x + 21$$

$$-4x = 6$$

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

$$11. \quad \frac{4x}{3} - \frac{2}{3} + \frac{x}{2} + 1 - 15 = \frac{x+2}{5} - \frac{x-4}{2}$$

$$40x - 20 + 15x + 30 - 450 = 6x + 12 - 15x + 60$$

$$64x = 512$$

$$x = 8$$

$$12. \quad \frac{5-x}{3} + 4 = 0$$

$$5 - x + 12 = 0$$

$$x = 17$$

$$13. \quad \frac{3x-1}{2} - \frac{x+12}{3} + \frac{1}{6}x = 0$$

$$9x - 3 - 2x - 24 + x = 0$$

$$8x = 27$$

$$x = \frac{27}{8}$$

$$14. \frac{2x-3}{7} - 1 = \frac{x-9}{21} + \frac{6-x}{3} - \frac{x}{7}$$

$$6x - 9 - 21 = x - 9 + 42 - 7x - 3x \quad 15x = 63$$

$$x = \frac{21}{5}$$

$$15. \frac{3x-2}{3} + \frac{x-12}{2} + 9 = \frac{5x-36}{4} + \frac{5}{3}x$$

$$12x - 8 + 6x - 72 + 108 = 15x - 108 + 20x \quad -17x = -136$$

$$x = 8$$

$$16. 3 \left[ \frac{1}{4} \left( x - \frac{1}{3}x \right) + \frac{3}{2} \left( \frac{1}{3}x - 1 \right) - \frac{x-1}{6} \right] = 2$$

$$3 \left[ \frac{1}{4} \cdot \frac{2}{3}x + \frac{1}{2}x - \frac{3}{2} - \frac{1}{6}x + \frac{1}{6} \right] = 2$$

$$\frac{1}{2}x + \frac{3}{2}x - \frac{9}{2} - \frac{1}{2}x + \frac{1}{2} = 2 \quad \frac{3}{2}x = 6$$

$$x = 4$$

$$17. \frac{1}{2} \left[ \left( \frac{1}{2}x - \frac{1}{4}x \right) - \left( \frac{1}{6} + \frac{5}{2} \right) \right] = \frac{3}{4} \left( x - \frac{1}{3} \right) - \left( x + \frac{1}{8} \right)$$

$$\frac{1}{2} \left[ \frac{1}{4}x - \frac{8}{3} \right] = \frac{3}{4}x - \frac{1}{4} - x - \frac{1}{8}$$

$$\frac{1}{8}x - \frac{4}{3} = \frac{3}{4}x - \frac{1}{4} - x - \frac{1}{8} \quad 3x = \frac{23}{3}$$

$$x = \frac{23}{9}$$

$$18. \frac{1}{2} \left[ \frac{5}{2}x + 2 - \left( x + \frac{1}{3} - \frac{4-x}{3} \right) \right] = x - \frac{1}{6}$$

$$\frac{1}{2} \left[ \frac{5}{2}x + 2 - \frac{3x+1-4+x}{3} \right] = x - \frac{1}{6}$$

$$\frac{15x+12-8x+6}{12} = x - \frac{1}{6} \quad -5x = -20$$

$$x = 4$$