

Módulo 14 Segundo Medio

$$1) \frac{1}{2}x + \frac{1}{3}x = 5 \quad / \cdot 6$$

$$\frac{1}{2}x \cdot 6^3 + \frac{1}{3}x \cdot 6^2 = 5 \cdot 6$$

$$3x + 2x = 30$$

$$5x = 30 \quad / :5$$

$$\boxed{x = 6}$$

$$\begin{array}{r|l} 2-3 & 2 \\ 1-3 & 3 \\ \hline & 1 \end{array}$$

6

$$2) \frac{1}{3}x - \frac{1}{2} + \frac{5}{6}x = 3 \quad / \cdot 6$$

$$\frac{1}{3}x \cdot 6^2 - \frac{1}{2} \cdot 6^3 + \frac{5}{6}x \cdot 6 = 3 \cdot 6$$

$$2x - 3 + 5x = 18$$

$$7x = 18 + 3$$

$$7x = 21 \quad / :7$$

$$\boxed{x = 3}$$

$$\begin{array}{r|l} 3-2-6 & 2 \\ 3 & 1-3 \\ \hline & 1 \end{array}$$

3

$$3) \frac{3}{4}x + 2 = \frac{5}{6}x + 1 \quad / \cdot 12$$

$$\frac{3}{4}x \cdot 12^3 + 2 \cdot 12 = \frac{5}{6}x \cdot 12^2 + 1 \cdot 12$$

$$9x + 24 = 10x + 12$$

$$9x - 10x = 12 - 24$$

$$-x = -12$$

$$\boxed{x = 12}$$

$$\begin{array}{r|l} 4-6 & 3 \\ 2-3 & 3 \\ 1-3 & 3 \\ \hline & 1 \end{array}$$

12

$$4) \frac{x}{2} + 6 - \frac{x}{4} = \frac{2x}{5} + 3 \quad | \cdot 20$$

$$\frac{x}{2} \cdot 20 + 6 \cdot 20 - \frac{x}{4} \cdot 20 = \frac{2x}{5} \cdot 20 + 3 \cdot 20$$

$$\begin{array}{r|l} 2 & 4 & 5 & 2 \\ 1 & 2 & 5 & 5 \\ & 2 & 1 & 2 \\ & 1 & & \end{array} \quad | \cdot 20$$

$$10x + 120 - 5x = 8x + 60$$

$$10x - 5x - 8x = 60 - 120$$

$$-3x = -60 \quad | : -3$$

$$\boxed{x = 20}$$

$$5) \frac{5x}{6} - \frac{x}{18} - \frac{3}{4}x = \frac{7}{12} - \frac{2}{9}x + \frac{2}{3} \quad | \cdot 36$$

$$\begin{array}{r|l} 6 & 18 & 4 & 12 & 9 \\ 3 & 9 & 2 & 6 & 9 \\ 1 & 3 & 2 & 2 & 3 \\ & 1 & 1 & 1 & 1 \end{array} \quad | \cdot 36$$

$$30x - 2x - 27x = 21 - 8x + 24$$

$$x + 8x = 45$$

$$9x = 45 \quad | : 9$$

$$\boxed{x = 5}$$

$$6) \frac{3x}{8} + 2 - \frac{4}{5}x = 1 + \frac{3}{10}x + \frac{3}{2} \quad | \cdot 40$$

$$\begin{array}{r|l} 8 & 5 & 10 & 2 \\ 4 & 5 & 5 & 1 \\ 2 & 5 & 5 & 1 \\ 1 & 5 & 5 & 1 \end{array} \quad | \cdot 40$$

$$15x + 80 - 32x = 40 + 12x + 60$$

$$15x - 32x - 12x = 40 + 60 - 80$$

$$-29x = 20 \quad | : -5$$

$$\boxed{x = \frac{-20}{29}}$$

$$7) \frac{4x+5}{8} - \frac{8x-3}{6} + \frac{5-3x}{3} = \frac{3+5x}{2} + \frac{3}{4} \quad | \cdot 24$$

$$3(4x+5) - 4(8x-3) + 8(5-3x) = 12(3+5x) + 6 \cdot 3$$

$$12x + 15 - 32x + 12 + 40 - 24x = 36 + 60x + 18$$

$$-44x - 60x = 54 - 67$$

$$-104x = -13 \quad | : -104$$

$$x = \frac{13}{104} \quad | : 13 = \boxed{\frac{1}{8} = x}$$