

5 Να λύσετε τις εξισώσεις:

$$\alpha) \frac{x+4}{5} - \frac{x-4}{3} = \frac{1-3x}{15} - 2$$

$$3x + 12 - 5x + 20 = 1 - 3x - 30$$

$$-2x + 32 = -29 - 3x$$

$$\boxed{x = -61}$$

$$\beta) \frac{y-1}{3} - \frac{2y+7}{6} = y + \frac{1-3y}{2}$$

$$2 \cdot \frac{6 \cdot (y-1)}{3} - \frac{1 \cdot (2y+7)}{6} = 6 \cdot y + \frac{3 \cdot (1-3y)}{2}$$

$$2 \cdot (y-1) - 1 \cdot (2y+7) = 6y + 3(1-3y)$$

$$2y - 2 - 2y - 7 = 6y + 3 - 9y$$

$$\cancel{2y} - \cancel{2y} - 6y + 9y = 2 + 7 + 3$$

$$3y = 12$$

$$y = \frac{12}{3}$$

$$\boxed{y = 4}$$

$$y) \frac{1}{4} (\omega + 4) - 7 = (1 - \omega) \frac{1}{7} + \frac{\omega - 23}{4}$$

$$\frac{1}{4} \omega + 1 - 7 = \frac{1}{7} - \frac{1}{7} \omega + \frac{\omega - 23}{4}$$

$$7\omega + 28 - 196 = 4 - 4\omega + (7\omega - 152)$$

$$7\omega + 28 - 196 = 4 - 4\omega + 7\omega - 152$$

$$4\omega = 4 - 152 - 28 + 196$$

$$4\omega = -176 + 196$$

$$4\omega = 20$$

$$\omega = \frac{20}{4}$$

$$\omega = 5$$

6 Να λύσετε τις εξισώσεις:

$$\alpha) 3x - \left(\frac{2x}{3} - 5\right) = 6 - \left(\frac{x}{3} - 2\right)$$

$$3x - 1\left(\frac{2x}{3} - 5\right) = 6 - 1\left(\frac{x}{3} - 2\right)$$

$$3x - \frac{2x}{3} + 5 = 6 - \frac{x}{3} + 2 \quad \in \mathbb{N} = 3$$

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

$$\underline{9x} - \underline{2x} + \underline{15} = \underline{18} - \underline{x} + 6$$

$$9x - 2x + x = -15 + 18 + 6$$

$$9x - 2x + x = 9$$

$$x = \frac{9}{8}$$

$$x = 1 \frac{1}{8}$$

$$\beta) 5 - 1 \left(\frac{t+1}{2} + \frac{1+2t}{3} \right) = 12 - 1 \left(t - \frac{t+5}{6} \right)$$

$$5 - \frac{t+1}{2} - \frac{1+2t}{3} = 12 - t + \frac{t+5}{6}$$