

1. asteer yfitalo

Exm. 1 $\frac{x}{4} - \frac{x}{3} = \frac{x}{2} + 1 \quad | \cdot 12$

$$\Leftrightarrow 12 \cdot \left(\frac{x}{4} - \frac{x}{3} \right) = 12 \cdot \left(\frac{x}{2} + 1 \right)$$

$$\Leftrightarrow \frac{12 \cdot x}{4} - \frac{12 \cdot x}{3} = 12 \cdot \frac{x}{2} + 12 \cdot 1$$

$$\Leftrightarrow \frac{3x}{1} - \frac{4x}{1} = \frac{6x}{1} + 12$$

$$\Leftrightarrow 3x - 4x = 6x + 12 \quad | -6x$$

$$\Leftrightarrow 3x - 4x - 6x = 12$$

$$\Leftrightarrow -7x = 12 \quad | :(-7)$$

$$\Leftrightarrow \underline{x = \frac{12}{-7} = -\frac{12}{7}}$$

Exm. 2 $6x = (2 + 3x)2$

$$\Leftrightarrow 6x = 4 + 6x \quad | -6x$$

$$\Leftrightarrow 6x - 6x = 4 \quad \Leftrightarrow 0 = 4 \quad \downarrow \text{epatori} \quad \text{Vast. ei ratkeme}$$

$$\lceil 3x \cdot 2 = \overset{6}{\underset{\uparrow}{3} \cdot x \cdot 2 = 6 \cdot x = 6x} \rceil$$

Exm. 3 $3(2x - 3) - 2(3x - 4) = -1$

$$\Leftrightarrow 6x - 9 - 6x + 8 = -1$$

$$\Leftrightarrow 6x - 6x = -1 - 8 + 9$$

$$\Leftrightarrow 0 = 0 \quad \text{Vast. kaikki mahdolliset } x \text{ toteuttavat yfitalo} \quad (x \in \mathbb{R})$$

Exm. 4 $5(\sqrt{2}x + 3) - x = 4x - 5$