

s. 145

Yhtälön alkeet

$$\begin{array}{ccc} \text{lauseke} & & \text{lauseke} \\ X + 5 & = & 12 \end{array}$$

yhtälö

Yhtälön ratkaisu: $X = 7$

esim.

$$\begin{array}{ccc} X + 5 & = & 12 \\ X + 5 - 5 & = & 12 - 5 \\ X & = & 7 \end{array} \quad \left\| -5 \right.$$

↑ lisätään molemmille puolille ↓

esim.

$$\begin{array}{ccc} X - 5 & = & 13 \\ X - 5 + 5 & = & 13 + 5 \\ X & = & 18 \end{array} \quad \left\| +5 \right.$$

esim.

$$\begin{array}{ccc} \frac{5X}{5} & = & \frac{30}{5} \\ X & = & 6 \end{array} \quad \left\| :5 \right.$$

s. 147

680 ⇒

680

a)

$$\begin{array}{ccc} X + 6 & = & 8 \\ X + 6 - 6 & = & 8 - 6 \\ X & = & 2 \end{array} \quad \left\| -6 \right.$$

$$\begin{aligned} \text{b)} \quad x + 3 &= 12 & \parallel -3 \\ x + 3 - 3 &= 12 - 3 \\ x &= 9 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad x + 4 &= 5 & \parallel -4 \\ x + 4 - 4 &= 5 - 4 \\ x &= 1 \end{aligned}$$

$$\begin{aligned} \text{d)} \quad \overset{x+3}{3} + x &= 8 & \parallel -3 \\ 3 + x - 3 &= 8 - 3 \\ x &= 5 \end{aligned}$$

(681)

$$\begin{aligned} \text{a)} \quad x - 8 &= 1 & \parallel +8 \\ x - 8 + 8 &= 1 + 8 \\ x &= 9 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad x - 3 &= 11 & \parallel +3 \\ x - 3 + 3 &= 11 + 3 \\ x &= 14 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad x - 2 &= 7 & \parallel +2 \\ x - 2 + 2 &= 7 + 2 \end{aligned}$$

$$\begin{aligned} \text{d)} \quad x - 9 &= 1 & \parallel +9 \\ x - 9 + 9 &= 1 + 9 \\ x &= 10 \end{aligned}$$

682

$$a) \frac{2x}{2} = \frac{10}{2} \quad \parallel :2$$

$$x = 5$$

$$b) \frac{5x}{5} = \frac{20}{5} \quad \parallel :5$$

$$x = 4$$

$$c) \frac{4x}{4} = \frac{8}{4} \quad \parallel :4$$

$$x = 2$$

$$d) \frac{3x}{3} = \frac{33}{3} \quad \parallel :3$$

$$x = 11$$

683

$$a) \frac{x}{2} = 5 \quad \parallel \cdot 2$$

$$2x = 5 \cdot 2$$

$$x = 10$$

684

685