

4.17 Ratkaise yhtälöpari

$$\begin{cases} \frac{2x+2y}{2} = 11 & \parallel \cdot 2 \\ \frac{3x-y}{3} = 3 & \parallel \cdot 3 \end{cases}$$

$$\begin{cases} 2(2x+2y) = 2 \cdot 11 \\ 3(3x-y) = 3 \cdot 3 \end{cases}$$

$$\begin{cases} 2x+2y = 22 \\ 3x-y = 9 & \parallel \cdot 2 \end{cases}$$

$$\begin{array}{r} 2x+2y = 22 \\ + 6x-2y = 18 \\ \hline 8x = 40 \end{array}$$

$$8x = 40 \parallel : 8$$

$$x = 5 \text{ (inj. *)}$$

$$3 \cdot 5 - y = 9$$

$$-y = 9 - 15$$

$$-y = -6$$

$$y = 6$$

$$\text{Vast. } \begin{cases} x = 5 \\ y = 6 \end{cases}$$

4.19 Ratkaise yhtälöpari $\begin{cases} 0,02x + 0,8y = 192 \\ -0,5x + 0,4y = -516 \end{cases}$



CAS-laskimella ja valitse oikea ratkaisu vaihtoehtoista 1-3.

$$\begin{cases} 0,02x + 0,8y = 192 \\ -0,5x + 0,4y = -516 \end{cases} \Big|_{x, y}$$

$$\{x=1200, y=210\}$$

Potenssi

$$\text{Esim. } \underbrace{3 \cdot 3 \cdot 3 \cdot 3}_{4 \text{ kpl}} = 3^4 = \underline{\underline{81}}$$

$$\text{Esim. } \underbrace{(-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2)}_{5 \text{ kpl}} = (-2)^5 = \underline{\underline{-32}}$$

$$\text{Esim. } -2^4 = -(2^4) = \underline{\underline{-16}}$$

↑ etumerkki (ei koroteta potenssiin)

$$\text{Esim. } \left(-\frac{2}{3}\right)^3 = \left(-\frac{2}{3}\right) \cdot \left(-\frac{2}{3}\right) \cdot \left(-\frac{2}{3}\right) = -\frac{2 \cdot 2 \cdot 2}{3 \cdot 3 \cdot 3} = \underline{\underline{-\frac{8}{27}}}$$

Kymmenen potenssit

$$\underbrace{1\,200\,000 \text{ kg}} = 1,2 \cdot 10^6 \text{ kg}$$

$$1,2 \cdot \frac{1\,000\,000}{10^6}$$

$$10^1 = 10$$

$$10^2 = 100$$

$$10^3 = 1\,000$$

$$10^6 = 1\,000\,000$$

$$\text{Esim. } 7,23 \cdot 10^4 = \underbrace{72300}_{4 \text{ kpl}}$$