

STACK - Yhtälöpari

1)
$$\begin{cases} 3y + 2x = 1 & || \cdot -2 \\ 4y + 4x = 12 \end{cases}$$

$$\begin{array}{r} -6y - 4x = -2 \\ 4y + 4x = 12 \\ \hline -2y = 10 \quad || : -2 \\ y = -5 \end{array}$$

$$\begin{array}{r} 4 \cdot -5 + 4x = 12 \\ -20 + 4x = 12 \\ 4x = 12 + 20 \\ 4x = 32 \quad || : 4 \\ x = 8 \end{array}$$

2)
$$\begin{cases} 2s = 3 + 6 & || \cdot 2 \\ 5 - 3 = -2t & || \cdot 3 \end{cases}$$

$$\begin{array}{r} 4s = 6 + 12 \\ 3s - 9 = -6t \\ \hline 7s - 9 = 12 \\ 7s = 12 + 9 \\ 7s = 21 \quad || : 7 \\ s = 3 \end{array}$$

$$\begin{array}{r} 5 - 3 = -2t \\ 3 - 3 = -2t \\ 0 = -2t \quad || : -2 \\ t = 0 \end{array}$$

3)
$$\begin{cases} 15y + 4x - 8 = 0 \\ 6y - 11 = -10x \end{cases}$$

$$\begin{array}{r} 15y + 4x = 8 \quad || \cdot 2 \\ 6y + 10x = 11 \quad || \cdot 5 \\ \hline 30y + 8x = 16 \\ -30y - 50x = -55 \\ \hline -42x = -39 \quad || : 42 \\ x = \frac{13}{14} \end{array}$$

$$\begin{array}{r} 15y + 4 \cdot \frac{13}{14} - 8 = 0 \\ 15y + \frac{26}{7} - 8 = 0 \\ 15y = -\frac{26}{7} + 8 \\ 15y = \frac{30}{7} \quad || : 15 \\ y = \frac{2}{7} \end{array}$$

4)
$$\begin{cases} f - \frac{5g}{3} = 7 \\ 3g + \frac{2f}{3} = -2 \end{cases}$$

$$\begin{array}{r} f = 7 + \frac{5g}{3} \\ f = 7 + 1,67g \\ f = 7 + \frac{5 \cdot -0,65}{3} \\ f \approx 0,08 \end{array}$$

$$\begin{array}{r} 3g + \frac{2 \cdot (7 + 1,67g)}{3} = -2 \\ 3g + \frac{2 + 3,34g}{3} = -2 \quad || \cdot 3 \\ 9g + 2 + 3,34g = -6 \\ 9g + 3,34g = -6 - 2 \\ 12,34g = -8 \quad || : 12,34 \\ g \approx -0,65 \end{array}$$

5) tuote A:n hinta / kpl = x
 tuote B:n hinta / kpl = y

$$\begin{cases} 60x + 35y = 534 \text{ €} & || \cdot -2 \\ 50x + 70y = 734 \text{ €} \end{cases}$$

$$\begin{array}{rcl} -120x - 70y & = & -1068 \\ 50x + 70y & = & 734 \\ \hline -70x & = & -334 \quad || : 70 \\ x & = & -\frac{167}{35} \\ & \approx & 4,77 \text{ €} \end{array}$$

$$\begin{aligned} 60 \cdot \frac{167}{35} + 35y &= 534 \\ \frac{2004}{7} + 35y &= 534 \\ 35y &= 534 - \frac{2004}{7} \\ 35y &= \frac{1734}{7} \quad || : 35 \\ y &= \frac{1734}{245} \\ &\approx 7,08 \text{ €} \end{aligned}$$