

Aufgabe 1

$$(I) \quad y = -6x - 57$$

$$(II) \quad y = 10x + 71$$

$$-6x - 57 = 10x + 71 \quad | +6x$$

$$-57 = 16x + 71 \quad | -71$$

$$-128 = 16x \quad | :16$$

$$\underline{-8 = x}$$

$x = -8$ einsetzen in (II)

$$y = 10 \cdot (-8) + 71$$

$$y = -80 + 71$$

$$\underline{y = -9}$$

$$(I) \quad y = -7x + 33$$

$$(II) \quad y = 3x - 27$$

$$-7x + 33 = 3x - 27 \quad | +7x$$

$$33 = 10x - 27 \quad | +27$$

$$60 = 10x \quad | :10$$

$$\underline{6 = x}$$

$x = 6$ einsetzen in (II)

$$y = 3 \cdot 6 - 27$$

$$y = 18 - 27$$

$$\underline{y = -9}$$

$$(I) \quad y = 5x + 2 \quad | \cdot 5$$

$$(II) \quad x = 5y + 56 \quad | -56$$

$$(I) \quad 5y = 25x + 10$$

$$(II) \quad x - 56 = 5y \quad \leftrightarrow$$

$$(I) \quad 5y = 25x + 10$$

$$(II) \quad 5y = x - 56$$

$$25x + 10 = x - 56 \quad | -x$$

$$24x + 10 = -56 \quad | -10$$

$$24x = -66 \quad | :24$$

$$\underline{x = -2,75}$$

$x = -2,75$ einsetzen in I

$$y = 5 \cdot (-2,75) + 2$$

$$y = -13,75 + 2$$

$$\underline{y = -11,75}$$

Probe mit II

$$x = 5 \cdot (-11,75) + 56$$

$$x = -58,75 + 56$$

$$x = -2,75 \quad \checkmark$$

Lösung auf AB ist falsch.

$$(I) \quad 8x - 3y = -35 \quad | +3y$$

$$(II) \quad 8x + y = -63 \quad | -y$$

$$(I) \quad \boxed{8x} = -35 + 3y$$

$$(II) \quad \boxed{8x} = -63 - y$$

$$-35 + 3y = -63 - y \quad | +y$$

$$-35 + 4y = -63 \quad | +35$$

$$4y = -28 \quad | :4$$

$$\underline{y = -7}$$

$y = -7$ einsetzen in (I):

$$8x - 3(-7) = -35$$

$$8x + 21 = -35 \quad | -21$$

$$8x = -56 \quad | :8$$

$$\underline{-x = -7}$$

Aufgabe 2

a)

$$(I) \quad x + y = 220 \quad | -y$$

$$(II) \quad x - y = 30 \quad | +y$$

$$(I) \quad \boxed{x} = 220 - y$$

$$(II) \quad \boxed{x} = 30 + y$$

$$220 - y = 30 + y \quad | +y$$

$$220 = 30 + 2y \quad | -30$$

$$190 = 2y \quad | :2$$

$$\underline{95 = y}$$

$y = 95$ einsetzen in (I) $x + 95 = 220 \quad | -95$

$$\rightarrow x = 125$$

b)

$$(I) \quad 5 \cdot x - 3y = 35 \quad | +3y$$

$$(II) \quad 3 \cdot x + 2y = 40 \quad | -2y$$

$$(I) \quad 5x = 35 + 3y \quad | \cdot 3$$

$$(II) \quad 3x = 40 - 2y \quad | \cdot 5$$

$$(I) \quad \boxed{15x} = 105 + 9y$$

$$(II) \quad \boxed{15x} = 200 - 10y$$

$$105 + 9y = 200 - 10y \quad | +10y$$

$$105 + 19y = 200 \quad | -105$$

$$19y = 95 \quad | :19$$

$$\underline{y = 5}$$

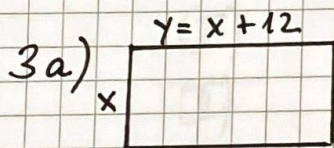
$y = 5$ einsetzen in (I)

$$5 \cdot x - 3 \cdot 5 = 35$$

$$5 \cdot x - 15 = 35 \quad | +15$$

$$5 \cdot x = 50 \quad | :5$$

$$\underline{x = 10}$$



$$\mu = 168$$

$$(I) \quad 2x + 2y = 168$$

$$(II) \quad y = \underline{x + 12}$$

$$(II) \text{ in } (I) \text{ einsetzen } 2x + 2 \cdot (x + 12) = 168$$

$$2x + 2x + 24 = 168$$

$$4x + 24 = 168 \quad | -24$$

$$4x = 144 \quad | :4$$

$$\underline{x = 36}$$

$$\underline{y = x + 12 = 36 + 12 = 48}$$

$$b) \quad \left. \begin{array}{l} 1 \text{ €} \\ 0,5 \text{ €} \end{array} \right\} \begin{array}{l} x \\ y \end{array} \left. \vphantom{\begin{array}{l} 1 \text{ €} \\ 0,5 \text{ €} \end{array}} \right\} \text{Anzahl} \quad x = y + 5$$

$$x \cdot 1 \text{ €} + y \cdot 0,5 \text{ €} = 20 \text{ €}$$

$$(I) \quad x = y + 5$$

$$(II) \quad x + 0,5 \cdot y = 20$$

$$\begin{array}{rcl} y + 5 + 0,5 \cdot y & = & 20 \quad | -5 \\ 1,5 y & = & 15 \quad | : 1,5 \\ \underline{y} & = & 10 \end{array}$$

$$y = 10 \text{ in (I)} \quad \underline{x = y + 5 = 10 + 5 = 15}$$

$$c) \quad \begin{array}{l} x: \text{Stundenlohn} \text{ f\"ur} \text{ Person A (erster)} \\ y: \text{Stundenlohn} \text{ f\"ur} \text{ Person B (zweiter)} \end{array}$$

$$(I) \quad 40 \cdot x + 48 \cdot y = 1140 \quad | -40x$$

$$(II) \quad 48 \cdot x + 40 \cdot y = 1148 \quad | -48x$$

$$(I) \quad 48 \cdot y = 1140 - 40 \cdot x \quad | : 5$$

$$(II) \quad 40 \cdot y = 1148 - 48 \cdot x \quad | : 6$$

$$(I) \quad 240 y = 5700 - 200 x$$

$$(II) \quad 240 y = 6888 - 288 x$$

$$5700 - 200 x = 6888 - 288 x \quad | +288x \quad | -5700$$

$$88 x = 1188 \quad | : 88$$

$$\underline{x = 13,5}$$

$x = 13,5$ einsetzen in (I):

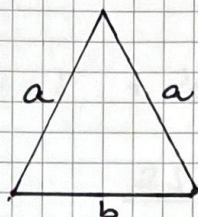
$$40 \cdot 13,5 + 48 \cdot y = 1140$$

$$540 + 48 \cdot y = 1140 \quad | -540$$

$$48 \cdot y = 600 \quad | :48$$

$$\underline{y = 12,5}$$

d)



$$u = 35 \text{ cm}$$

$$(I) \quad b = a - 5,5$$

$$(II) \quad 2a + b = 35$$

$$2a + a - 5,5 = 35 \quad | +5,5$$

$$3a = 40,5 \quad | :3$$

$$\underline{a = 13,5}$$

$$\underline{b = a - 5,5 = 13,5 - 5,5 = 8}$$

e)

x Anzahl Einzelzimmer } 75
y " " Doppelzimmer }

$$(I) \quad x + y = 75 \rightarrow x = 75 - y$$

$$(II) \quad x + 2y = 135$$

$$75 - y + 2y = 135$$

$$75 + y = 135 \quad | -75$$

$$\underline{y = 60}$$

$$y = 60 \text{ in (I)} \quad x + y = 75$$

$$x + 60 = 75 \quad | -60$$

$$\underline{x = 15}$$

f) x : Alter v. Regina 5 Jahre älter
 y : " " Hannah

$$(I) \quad x = y + 5$$

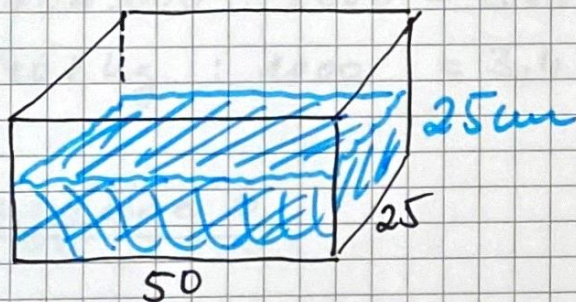
$$(II) \quad \underbrace{x + 20}_{\text{in 20 Jahren}} = 2 \cdot y \quad \leftarrow \text{wie heute}$$

$$y + 5 + 20 = 2 \cdot y \quad | -y$$

$$\underline{25 = y \text{ (Hannah)}}$$

$$y = 25 \text{ in (I)} \quad \underline{x = y + 5 = 25 + 5 = 30 \text{ (Regina)}}$$

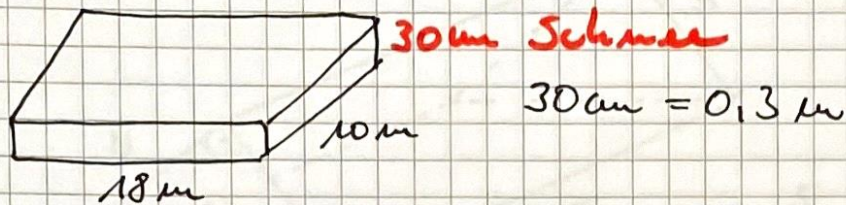
Aufgabe 4



$$V = 50 \cdot 25 \cdot 25 = 31.250 \text{ cm}^3$$

$$31.250 \text{ cm}^3 : 1000 = 31,25 \text{ Liter}$$

Aufgabe 5



$$V = 18 \cdot 10 \cdot 0,3 = 54 \text{ m}^3$$

$$54 \text{ m}^3 = 540 \text{ dm}^3$$

$$1 \text{ m}^3 = 1 \text{ m} \cdot 1 \text{ m} \cdot 1 \text{ m}$$

$$= 10 \text{ dm} \cdot 10 \text{ dm} \cdot 10 \text{ dm}$$

$$= 1000 \text{ dm}^3$$

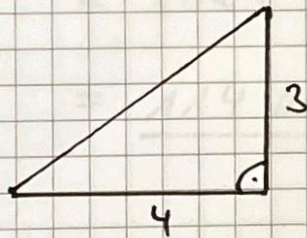
$$\text{Damit } 54 \text{ m}^3 = 54000 \text{ dm}^3$$

$$54000 \text{ dm}^3 \cdot 63 \text{ gr} / \text{dm}^3 = 3402.000 \text{ gr}$$

$$3402.000 : 1000 = 3402 \text{ kg}$$

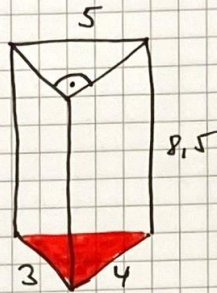
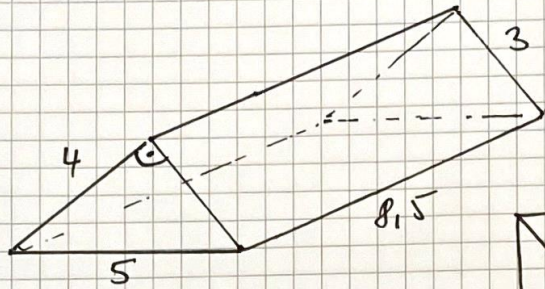
$$3402 \text{ kg} : 1000 = 3,402 \text{ Tonnen}$$

Aufgabe 6



Grundfläche G

$$G = \frac{3 \cdot 4}{2} = 6 \text{ cm}^2$$



g

$$\begin{aligned} V &= G \cdot h \\ &= 6 \cdot 8,5 \\ &= \underline{51 \text{ cm}^3} \end{aligned}$$

$$\begin{aligned} M &= 8,5 \cdot 3 + 8,5 \cdot 4 + 8,5 \cdot 5 \\ &= 25,5 + 34 + 42,5 \\ &= \underline{102 \text{ cm}^2} \end{aligned}$$

$$\begin{aligned} O &= M + 2 \cdot G && \text{Boden + Deckel} \\ &= 102 + 2 \cdot 6 \\ &= 102 + 12 \\ &= \underline{114 \text{ cm}^2} \end{aligned}$$