

1. $8\% = \frac{8}{100} = \frac{8 \cdot x}{100 \cdot x}$

Pythagoras:

$$(100 \cdot x)^2 + (8 \cdot x)^2 = 12'000^2$$

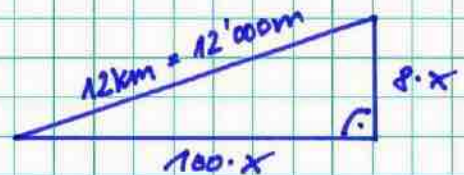
$$10'000 \cdot x^2 + 64 \cdot x^2 = 144'000'000$$

$$10'064 \cdot x^2 = 144'000'000 \quad | : 10'064$$

$$x^2 \hat{=} 14'308 \quad \text{TR (nicht runden)} \quad | \sqrt{\quad}$$

$$\underline{x \hat{=} 119,6}$$

⇒ Vertikaler Höhenunterschied: $8 \cdot x \hat{=} \underline{\underline{956,94 \text{ m}}}$



2. $15\% = \frac{15}{100} = \underline{0,15}$

⇒ $\text{arc tan}(\tan^{-1}) 0,15 \hat{=} \underline{\underline{8,5^\circ}}$

3. Pythagoras:

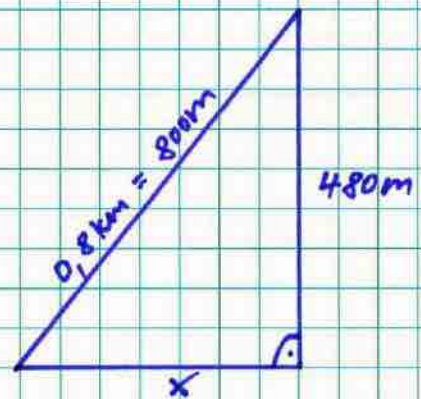
$$x^2 + 480^2 = 800^2 \quad | -480^2$$

$$x^2 = 800^2 - 480^2 \quad | \sqrt{\quad}$$

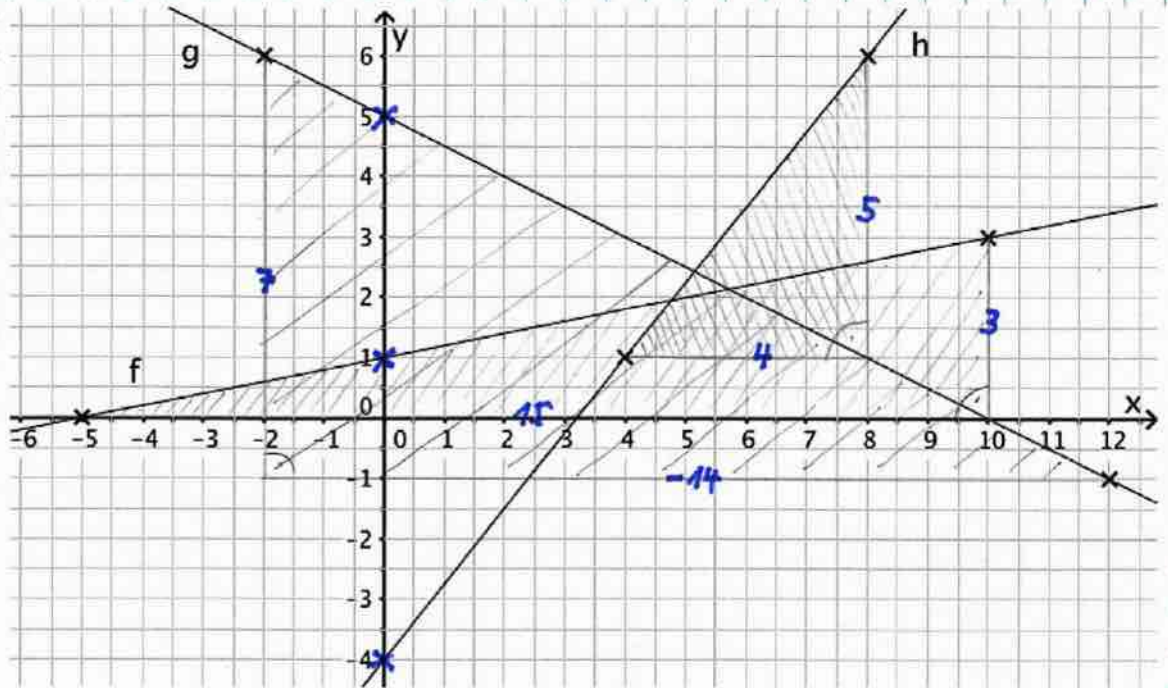
$$x = \sqrt{800^2 - 480^2}$$

$$= \underline{\underline{640}}$$

⇒ Steigung: $\frac{480}{640} = 0,75 = \underline{\underline{75\%}}$



4.



$$f: \text{Steigung: } \frac{13}{155} = \underline{\underline{\frac{1}{5}}}$$

$$\Rightarrow y = \underline{\underline{\frac{1}{5} \cdot x + 1}}$$

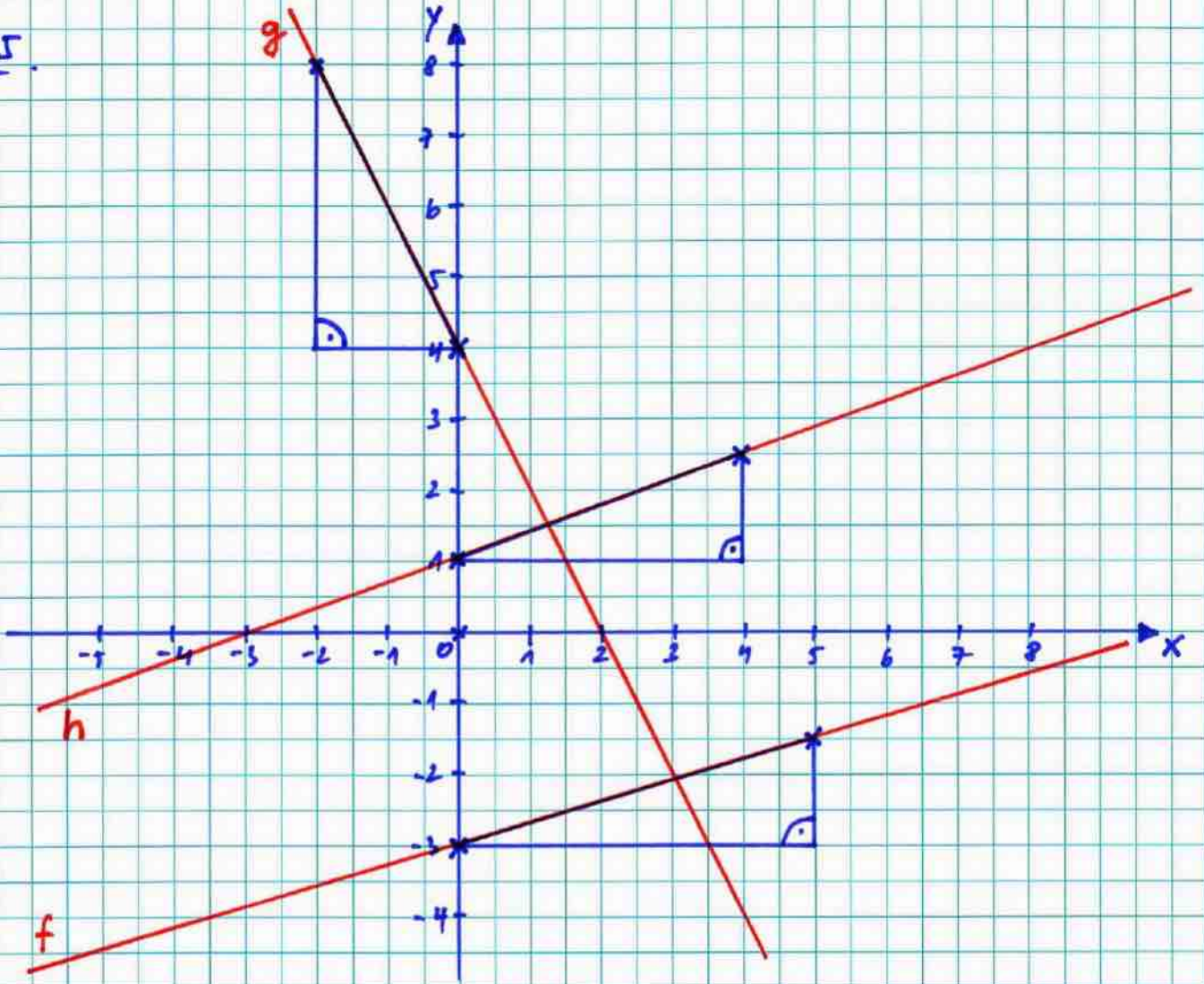
$$g: \text{Steigung: } -\frac{7}{14} = \underline{\underline{-\frac{1}{2}}}$$

$$\Rightarrow y = \underline{\underline{-\frac{1}{2} \cdot x + 5}}$$

$$h: \text{Steigung: } \underline{\underline{\frac{17}{4}}}$$

$$\Rightarrow y = \underline{\underline{\frac{17}{4} \cdot x - 4}}$$

5.



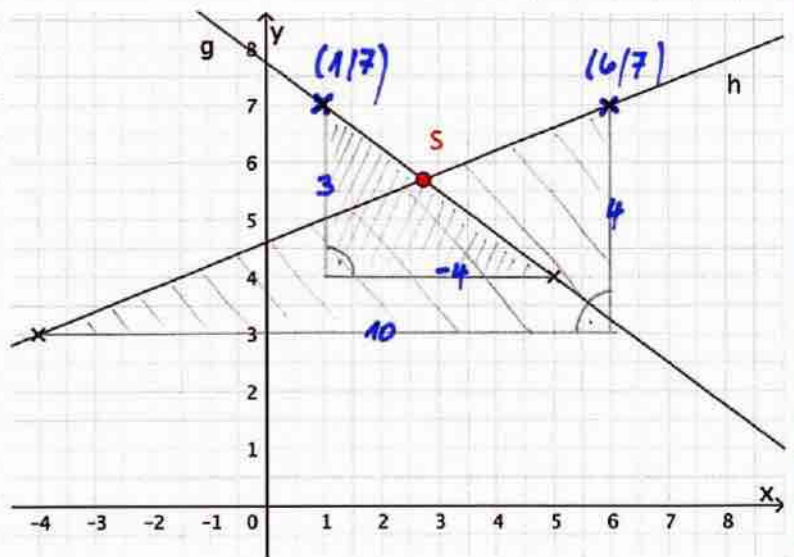
6.

g:

Steigung: $-\frac{3}{4}$

h:

Steigung: $\frac{24}{30} = \frac{2}{5}$



a.) Geradengleichungen:

$$\Rightarrow g: y = -\frac{3}{4} \cdot x + b$$

$$7 = -\frac{3}{4} \cdot 1 + b$$

$$\frac{28}{4} = -\frac{3}{4} + b \quad \curvearrowright \quad b = \frac{31}{4}$$

$$\rightarrow y = \underline{\underline{-\frac{3}{4} \cdot x + \frac{31}{4}}}$$

$$\Rightarrow h: y = \frac{2}{5} \cdot x + b$$

$$7 = \frac{2}{5} \cdot 6 + b$$

$$\frac{35}{5} = \frac{12}{5} + b \quad \curvearrowright \quad b = \frac{23}{5}$$

$$\rightarrow y = \underline{\underline{\frac{2}{5} \cdot x + \frac{23}{5}}}$$

b.) Schnittpunkt:

$$g: y_g = -\frac{3}{4} \cdot x + \frac{31}{4}$$

$$h: y_h = \frac{2}{5} \cdot x + \frac{23}{5}$$

$$\Rightarrow y_g = y_h$$

$$\Rightarrow -\frac{3}{4} \cdot x + \frac{31}{4} = \frac{2}{5} \cdot x + \frac{23}{5} \quad | \cdot 20$$

$$-15 \cdot x + 155 = 8 \cdot x + 92 \quad | +15 \cdot x$$

$$155 = 23 \cdot x + 92 \quad | -92$$

$$63 = 23 \cdot x \quad | :23$$

$$\underline{\underline{\frac{63}{23} = x}}}$$

$$\Rightarrow y_h = \frac{2}{5} \cdot x + \frac{23}{5}$$

$$= \frac{2}{5} \cdot \frac{63}{23} + \frac{23}{5}$$

$$= \frac{126}{115} + \frac{529}{115} = \frac{131}{\cancel{115}_{23}} = \underline{\underline{\frac{131}{23}}}$$

$$\Rightarrow \text{Schnittpunkt: } \underline{\underline{S\left(\frac{63}{23} \mid \frac{131}{23}\right)}}$$