

Lösungen zu Übungsblatt Geometrie - Strahlensätze

1. a)  $\frac{h1}{g3} = \frac{h2}{g1}$

b)  $\frac{g3}{g2} = \frac{h1}{h3}$

c)  $\frac{c}{a} = \frac{h1+h3}{h2}$

d)  $\frac{g2}{h3} = \frac{g1}{h2}$

e)  $\frac{b}{c} = \frac{h3}{h3+h1}$

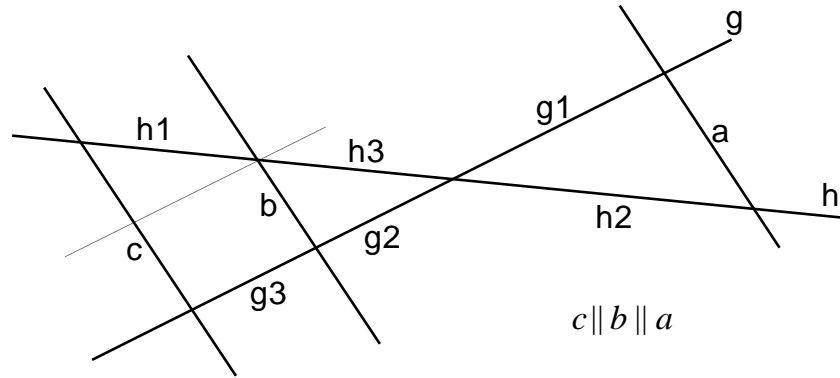
f)  $\frac{h2}{h1+h3} = \frac{g1}{g2+g3}$

g)  $\frac{g2}{b} = \frac{g3}{c-b}$

h)  $\frac{a}{h2} = \frac{b}{h3}$

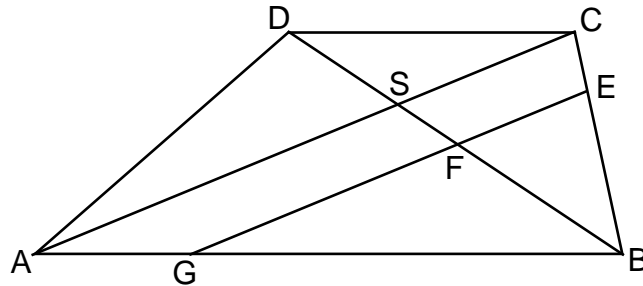
i)  $\frac{h3}{h2} = \frac{b}{a}$

k)  $\frac{c}{b} = \frac{g3+g2}{g2}$



2.

a)  $\frac{\overline{BE}}{\overline{BC}} = \frac{5}{5+2} = \underline{\underline{\frac{5}{7}}}$



b)  $\overline{EG} : \overline{AC} = 5 : 7 \Rightarrow \overline{EG} = \frac{5}{7} \cdot \overline{AC} = \frac{5}{7} \cdot 14cm = \underline{\underline{10cm}}$

c)  $\frac{\overline{CS}}{\overline{SA}} = \frac{\overline{CD}}{\overline{AB}} = \frac{12cm}{16cm} = \frac{3}{4}$

$$\left. \begin{array}{l} \Rightarrow \overline{CS} = \frac{3}{7} \cdot \overline{AC} = \underline{\underline{6cm}} \\ \Rightarrow \overline{SA} = \frac{4}{7} \cdot \overline{AC} = \underline{\underline{8cm}} \end{array} \right\} \overline{CS} + \overline{SA} = 14cm = \overline{AC}$$

d)  $\frac{\overline{BS}}{\overline{DS}} = \frac{\overline{AB}}{\overline{CD}} \Rightarrow \overline{BS} = \frac{\overline{AB}}{\overline{CD}} \cdot \overline{DS} = \frac{16cm}{12cm} \cdot 10,5cm = \underline{\underline{14cm}}$

$$\frac{\overline{BF}}{\overline{BS}} = \frac{5}{7} \Rightarrow \overline{BF} = \frac{5}{7} \cdot \overline{BS} = \frac{5}{7} \cdot 14cm = \underline{\underline{10cm}}$$