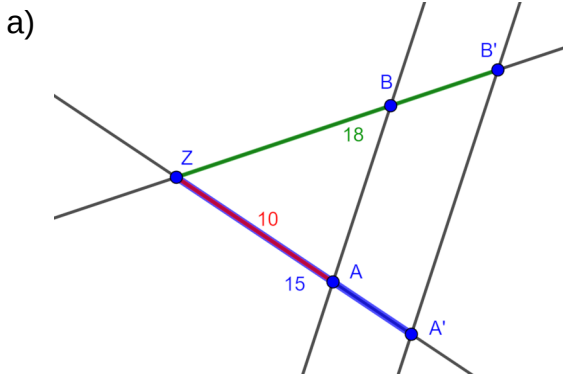
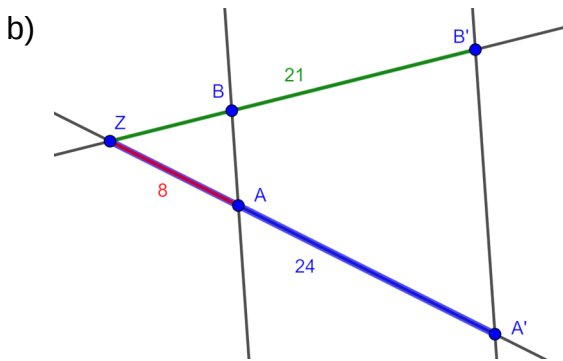


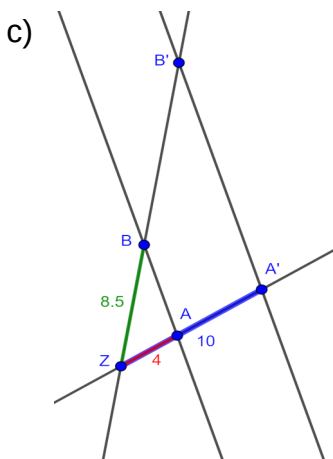
Fehlende Größen Berechnen



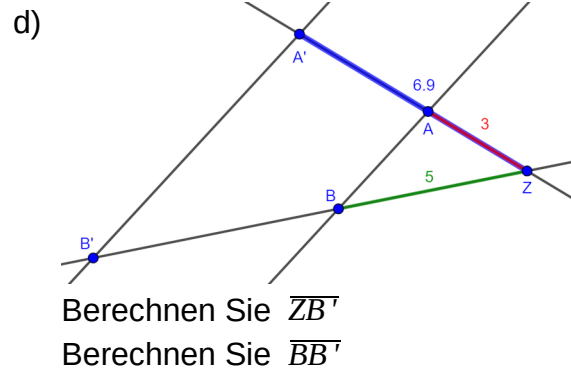
Berechnen Sie \overline{ZB}
 Berechnen Sie $\overline{BB'}$



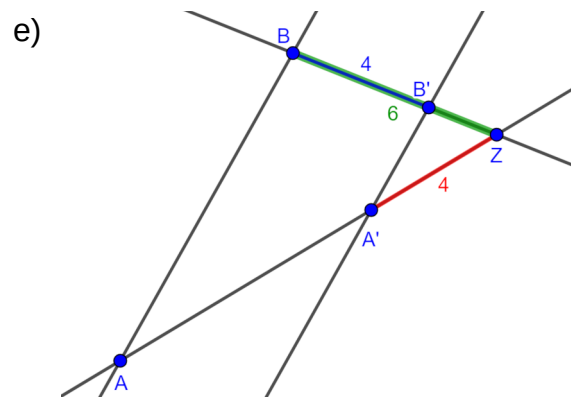
Berechnen Sie \overline{ZB}
 Berechnen Sie $\overline{BB'}$



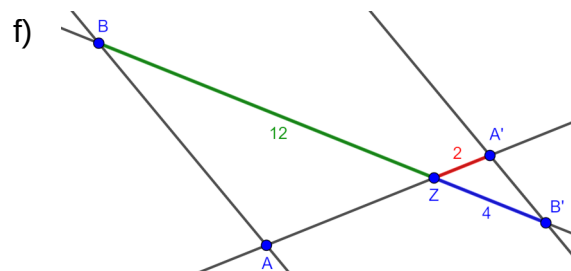
Berechnen Sie $\overline{ZB'}$
 Berechnen Sie $\overline{BB'}$



Berechnen Sie $\overline{ZB'}$
 Berechnen Sie $\overline{BB'}$



Berechnen Sie $\overline{ZA'}$
 Berechnen Sie $\overline{AA'}$

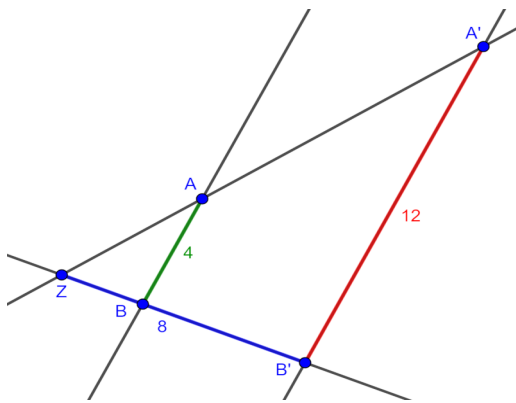


Berechnen Sie \overline{ZA}
 Berechnen Sie $\overline{AA'}$



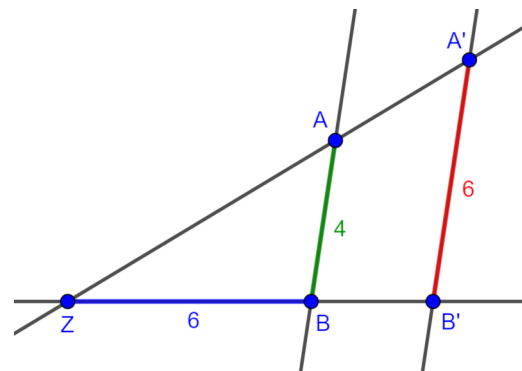
Strahlensätze

g)



Berechnen Sie \overline{ZB}
 Berechnen Sie $\overline{BB'}$

h)



Berechnen Sie $\overline{ZB'}$
 Berechnen Sie $\overline{BB'}$



Lösungen

Fehlende Größen Berechnen

$$\begin{aligned} \text{a) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{15}{10} = \frac{18}{\overline{ZB}} \\ \Rightarrow \frac{3}{2} &= \frac{18}{\overline{ZB}} \quad | \cdot \overline{ZB} \\ \frac{3}{2} \cdot \overline{ZB} &= 18 \quad | \cdot 2 \\ 3 \cdot \overline{ZB} &= 36 \quad | \div 3 \\ \overline{ZB} &= 12 \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 18 - 12 \\ \Rightarrow \overline{BB'} &= 6 \end{aligned}$$

$$\begin{aligned} \text{b) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{24}{8} = \frac{21}{\overline{ZB}} \\ \Rightarrow 3 &= \frac{21}{\overline{ZB}} \quad | \cdot \overline{ZB} \\ 3 \cdot \overline{ZB} &= 21 \quad | \div 3 \\ \overline{ZB} &= 7 \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 21 - 7 \\ \Rightarrow \overline{BB'} &= 14 \end{aligned}$$

$$\begin{aligned} \text{c) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{10}{4} = \frac{\overline{ZB'}}{8,5} \\ \Rightarrow \frac{5}{2} &= \frac{\overline{ZB'}}{8,5} \quad | \cdot 8,5 \\ \overline{ZB'} &= 21,25 \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 21,25 - 8,5 \\ \Rightarrow \overline{BB'} &= 12,75 \end{aligned}$$

$$\begin{aligned} \text{d) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{6,9}{3} = \frac{\overline{ZB'}}{5} \\ \Rightarrow 2,3 &= \frac{\overline{ZB'}}{5} \quad | \cdot 5 \\ \overline{ZB'} &= 11,5 \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 11,5 - 5 \\ \Rightarrow \overline{BB'} &= 6,5 \end{aligned}$$

$$\begin{aligned} \text{e) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{4}{\overline{ZA}} = \frac{6-4}{6} \\ \Rightarrow \frac{4}{\overline{ZA}} &= \frac{2}{6} \\ \frac{4}{\overline{ZA}} &= \frac{1}{3} \quad | \cdot \overline{ZA} \\ 4 &= \frac{1}{3} \cdot \overline{ZA} \quad | \cdot 3 \\ \overline{ZA} &= 12 \\ \overline{AA'} &= \overline{ZA} - \overline{ZA'} \\ \Rightarrow \overline{AA'} &= 12 - 4 \\ \Rightarrow \overline{AA'} &= 8 \end{aligned}$$

$$\begin{aligned} \text{f) } \frac{\overline{ZA'}}{\overline{ZA}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{2}{\overline{ZA}} = \frac{4}{12} \\ \Rightarrow \frac{2}{\overline{ZA}} &= \frac{1}{3} \quad | \cdot \overline{ZA} \\ 2 &= \frac{1}{3} \cdot \overline{ZA} \quad | \cdot 3 \\ \overline{ZA} &= 6 \\ \overline{AA'} &= \overline{ZA} + \overline{ZA'} \\ \Rightarrow \overline{AA'} &= 6 + 2 \\ \Rightarrow \overline{AA'} &= 8 \end{aligned}$$

$$\begin{aligned} \text{g) } \frac{\overline{A'B'}}{\overline{AB}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{12}{4} = \frac{8}{\overline{ZB}} \\ \Rightarrow 3 &= \frac{8}{\overline{ZB}} \quad | \cdot \overline{ZB} \\ 3 \cdot \overline{ZB} &= 8 \quad | \div 3 \\ \overline{ZB} &= \frac{8}{3} \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 8 - \frac{8}{3} \\ \Rightarrow \overline{BB'} &= \frac{16}{3} \end{aligned}$$



Strahlensätze

$$\begin{aligned} \text{h) } \frac{\overline{A'B'}}{\overline{AB}} &= \frac{\overline{ZB'}}{\overline{ZB}} \Rightarrow \frac{6}{4} = \frac{\overline{ZB'}}{6} \\ \Rightarrow \frac{3}{2} &= \frac{\overline{ZB'}}{6} \quad | \cdot 6 \\ \overline{ZB'} &= 9 \\ \overline{BB'} &= \overline{ZB'} - \overline{ZB} \\ \Rightarrow \overline{BB'} &= 9 - 6 \\ \Rightarrow \overline{BB'} &= 3 \end{aligned}$$

