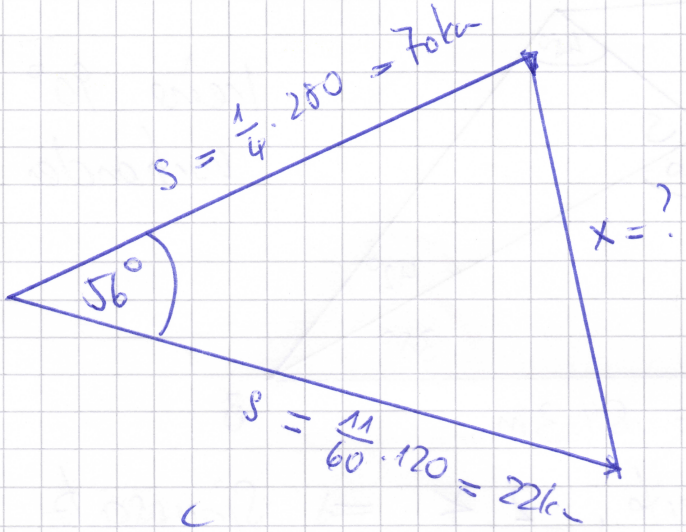
3. Trigonometrie

23.



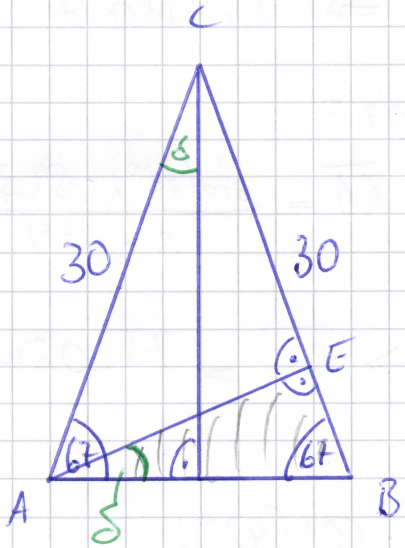
Cosinussatz:

$x^2 = 70^2 + 22^2 - 2 \cdot 70 \cdot 22 \cdot \cos 56°$

$x^2 = 3661.69$

$x = 60.51 km$

24.



$\delta = 90° - 67° = 23°$

$\sin\delta = \frac{\frac{1}{2}\overline{AB}}{30} \Rightarrow \frac{1}{2}\overline{AB} = 30 \cdot \sin(23°)$

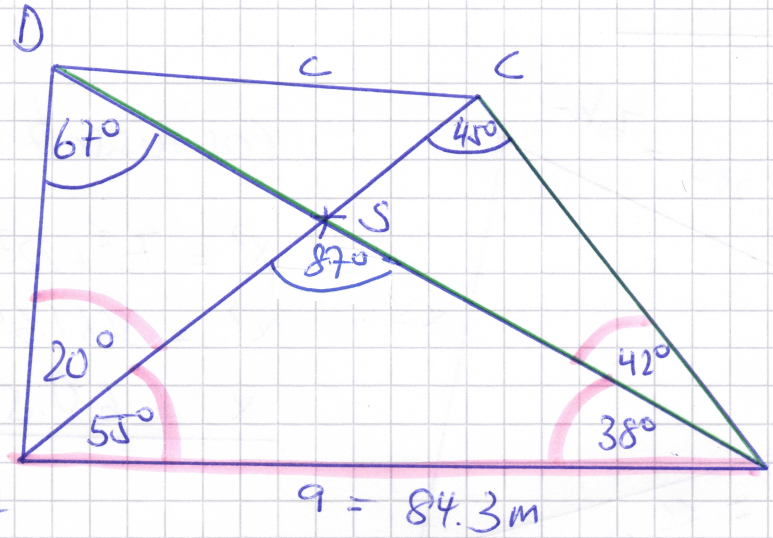
$\overline{AB} = 23.44cm$

$\sin(67°) = \frac{\overline{AE}}{23.44} \rightarrow \overline{AE} = 21.58cm$

$\sin(23°) = \frac{\overline{EB}}{23.44} \rightarrow \overline{EB} = 9.16cm$

$A = \frac{1}{2} \cdot \overline{AE} \cdot \overline{EB} = 98.81cm^2$

25.



keine 90° ∢ vorhanden!

Bekannt: 1 Seite, 2 ∢ ⇒ Sinussatz

$180° - 55° - 38° - 20° = 67°$

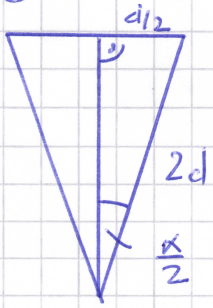
$\overline{BD}$: $\frac{84.3}{\sin(67°)} = \frac{\overline{BD}}{\sin(75°)} \Rightarrow \overline{BD} = \frac{\sin(75°) \cdot 84.3}{\sin(67°)} = 88.46m$

$\overline{BC}$: $\frac{84.3}{\sin(45°)} = \frac{\overline{BC}}{\sin(55°)} \Rightarrow \overline{BC} = 97.65m$

$c^2 = \overline{BC}^2 + \overline{BD}^2 - 2 \cdot \overline{BC} \cdot \overline{BD} \cdot \cos(42°)$

$c = 67.24m$

26. $s = 2d$



$\sin\left(\frac{\alpha}{2}\right) = \frac{d/2}{2d} = \frac{1}{4}$

$\Rightarrow \frac{\alpha}{2} = \sin^{-1}\left(\frac{1}{4}\right) = 14.48°$

$\alpha = 28.96°$