

4.

$\vec{A}$

75 km  $30^\circ$  W of N

$$\begin{aligned} A_x &= A \sin 30^\circ \\ &= 75 \text{ km} \cdot 0.5 \\ &= -37.5 \text{ km} \end{aligned}$$

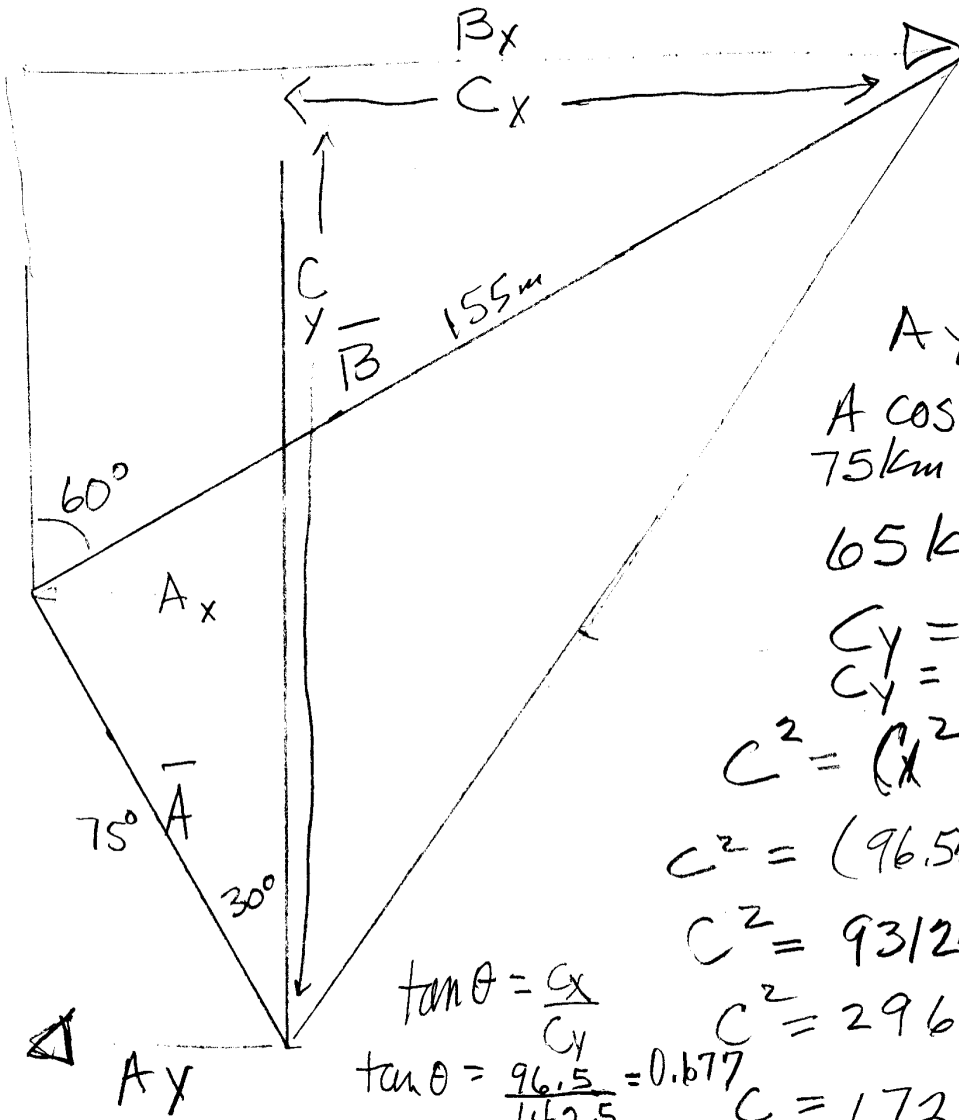
$$C_x = -37.5 \text{ km} + 134 \text{ km}$$

$$C_x = 96.5 \text{ km}$$

$\vec{B}$

155 km  $60^\circ$  E of N

$$\begin{aligned} B_x &= B \sin 60^\circ \\ &= 155 \text{ km} \cdot 0.866 \\ &= 134 \text{ km} \end{aligned}$$



$A_y$

$$A \cos 30^\circ$$

$$75 \text{ km} \cdot 0.866$$

$$65 \text{ km}$$

$$C_y = A_y + B_y$$

$$C_y = 142.5 \text{ km}$$

$$C^2 = C_x^2 + C_y^2$$

$$C^2 = (96.5 \text{ km})^2 + (142.5 \text{ km})^2$$

$$C^2 = 9312 \text{ km}^2 + 20306 \text{ km}^2$$

$$C^2 = 29618 \text{ km}^2$$

$$C = 172 \text{ km}$$

$$\tan \theta = \frac{C_y}{C_x}$$

$$\tan \theta = \frac{142.5}{96.5} = 0.677$$

$$\theta = 34^\circ \text{ E of N}$$

$B_y$

$$B \cos 60^\circ$$

$$155 \text{ km} \cdot 0.5$$

$$77.5 \text{ km}$$