

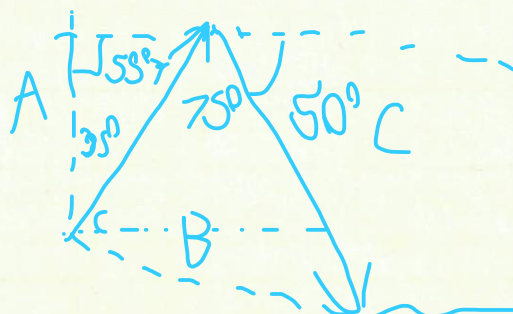
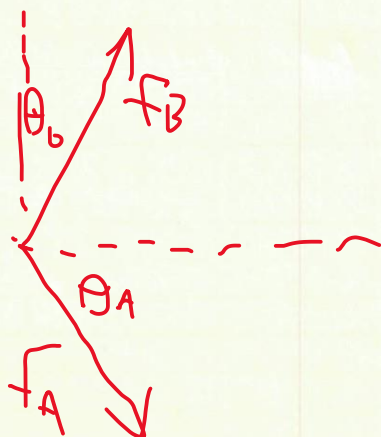
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ME201 H01.2

Seah/Hofmann

$$F_A = 10\text{ N} \quad F_B = 5\text{ N}$$

$$\theta_A = 50^\circ \quad \theta_B = 35^\circ$$



$$B = \sqrt{A^2 + C^2 - 2AC \cos b}$$

$$B = \sqrt{5^2 + 10^2 - 2(5)(10) \cos 75^\circ}$$

$$B = 9.96\text{ N}$$

$$\frac{\sin b}{B} = \frac{\sin c}{C}$$

$$\sin^{-1} \left( \frac{C \sin b}{B} \right) = \sin^{-1} \left( \frac{10 \sin 75^\circ}{9.96} \right) = 75.98^\circ$$

$$- ((75.98^\circ + 35^\circ) - 90^\circ) = \boxed{21^\circ}$$

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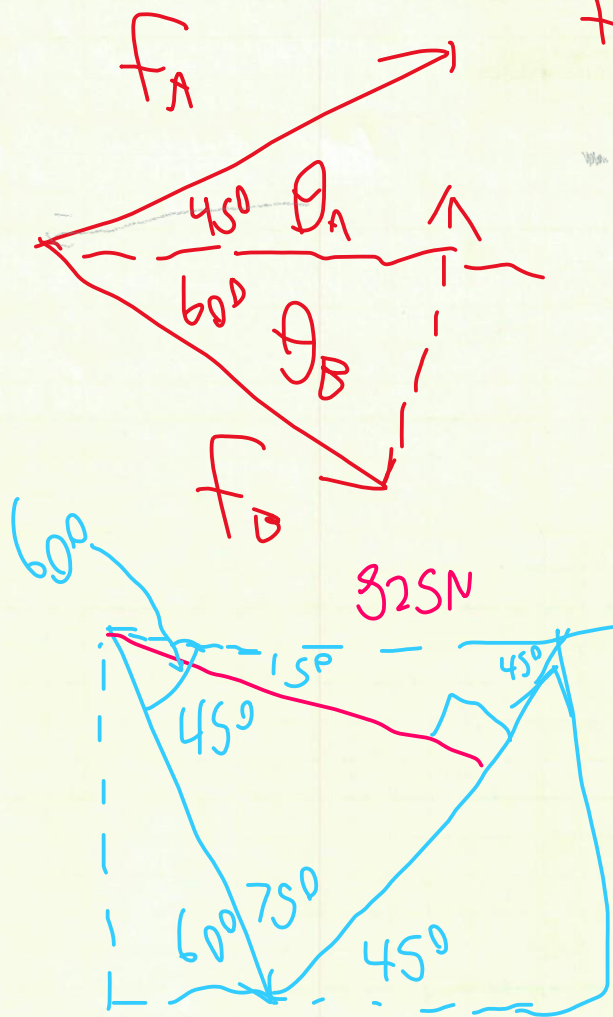
Seah/Hofmann

2.

$$F_A = ?$$

$$F_B = ?$$

$$825 \text{ N}$$



$$\frac{F_B}{\sin \alpha} = \frac{F_R}{\sin \beta}$$

$$F_B = \frac{F_R \sin \alpha}{\sin \beta}$$

$$F_B = \frac{825 (\sin 45^\circ)}{\sin 15^\circ} = \boxed{6024 \text{ N}}$$

$$F_A = 825 (\sin 45^\circ + \sqrt{604^2 - 825^2} \sin 45^\circ) \sin 23^\circ = \boxed{7740 \text{ N}}$$