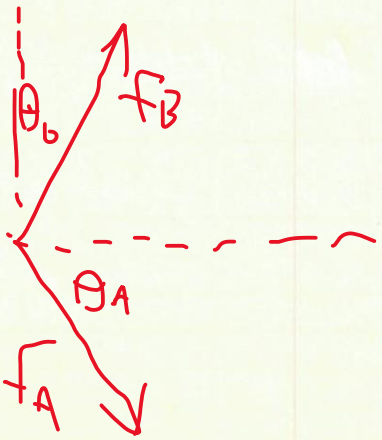
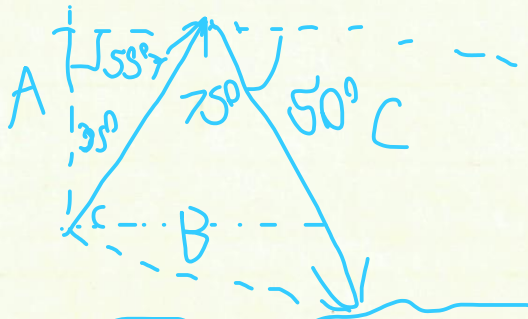
$f_A = 10N \quad f_B = 5N$

$\theta_A = 50° \quad \theta_B = 35°$





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

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

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

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

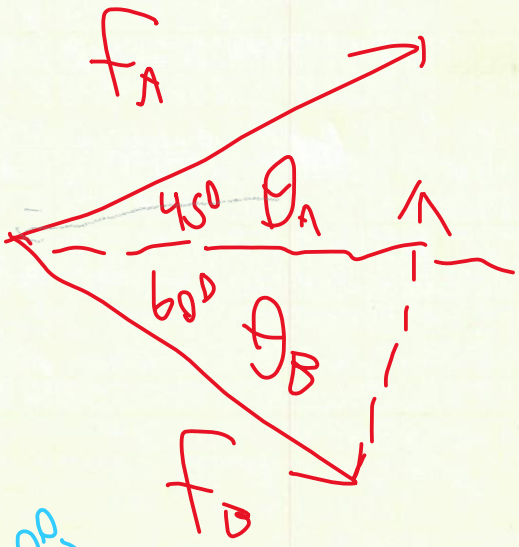
$$\sin^{-1}\left(\frac{C\sin b}{B}\right) = \sin^{-1}\left(\frac{10\sin 75}{9.96}\right) = 75.96$$

$$-\left((75.96° + 35°) - 90\right) = \boxed{21°}$$

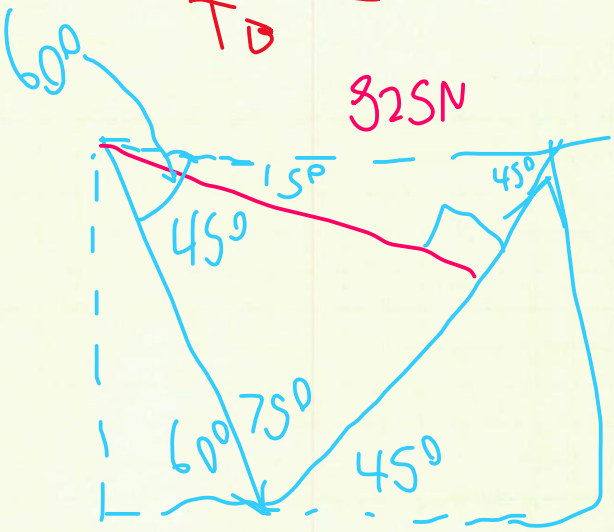
2.

$F_A = ?$

$F_B = ?$



825N



$$\frac{f_B}{\sin\alpha} = \frac{f_R}{\sin R}$$

$$f_B = \frac{f_R \sin\alpha}{\sin r}$$

$$f_B = \frac{825(\sin 45)}{\sin 75} = 604\,N$$

$$F_A = 825\cos 45 + \sqrt{604^2 - 825^2 \sin 45^2} = 740\,N$$