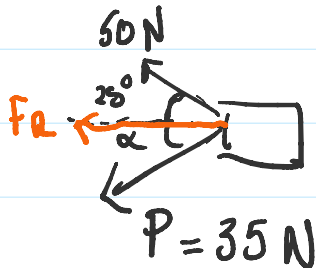Lucas Lima do Nascimento

1)

$$\begin{cases} Fx = Px \\ FR = Fy + Py \end{cases}$$

$$50 \cdot sen(25)° = 35 \cdot sen(\alpha)$$

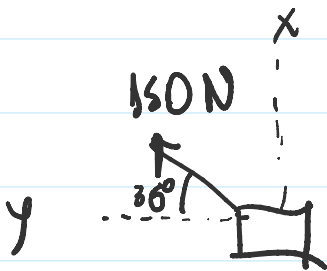$$sen\ \alpha = \frac{50 \cdot sen(25)}{35} \implies \alpha = 37,1°$$

2)

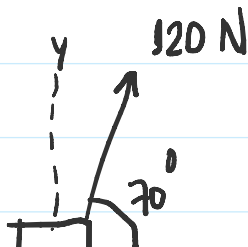$$FR = 50 \cdot cos(25) + 35 \cdot cos(37,1)$$

$$FR = 73,2\ N$$
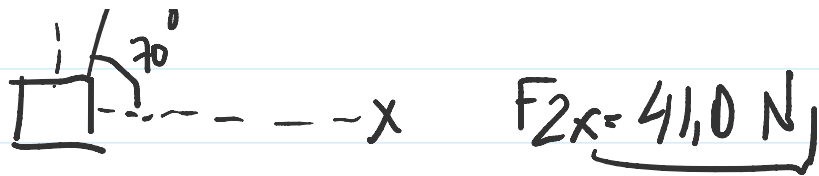
3)

$$F1x = 150 \cdot cos\ 35°$$

$$F1x = -122,9\ N$$

4) $\quad F1y = 150 \cdot sen(35°)$

$\quad\quad F1y = 86,0$

5)

$$F2x = 120 \cdot cos(70)$$

$$70^0$$

$$- - - X \quad F_{2x} = 41,0 \ N$$
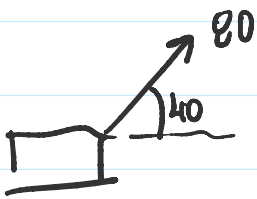
6) $F_{2y} = 120 \cdot sen(70)$

$$\underline{F_{2y} = 112,8 \ N}$$

7)

80

40

$$F_{3x} = 80 \cdot cos(40)$$

$$\underline{F_{3x} = 61,3 \ N}$$

8) $F_{3y} = 80 \cdot sen(40)$

$$\underline{F_{3y} = 51,4 \ N}$$

9) $\underline{F_{Rx} = -122,9 + 41 + 61,3 = -20,6 \ N}$

10) $86 + 112,8 + 51,4 = \underline{250,2 \ N}$

11)

920 N

$$sen \ \alpha = \frac{720}{T}$$
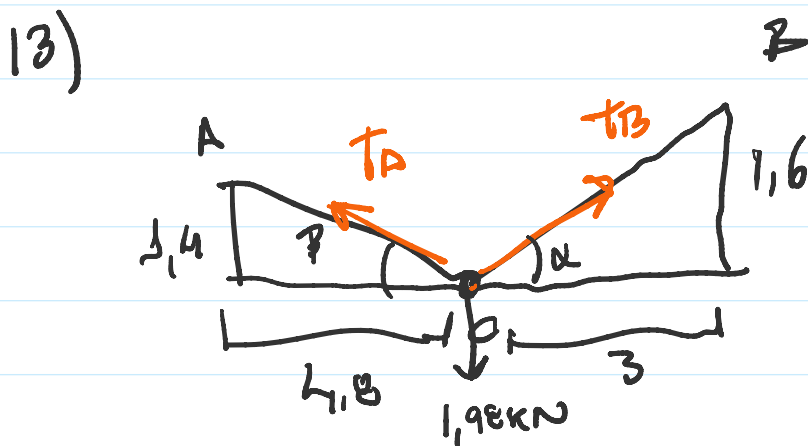
$$tg \ \alpha = \frac{24}{7}$$

$$\underline{\alpha = 18,9^0}$$

$$T = \frac{720}{sen \ (\alpha)}$$

$$T = 2222,8 \text{ N}$$

12) $2222,8 \cdot \cos$

$$T_y = 21029$$

13)

$$\begin{cases} T_{AX} = T_{BX} & ① \\ 1,98 = T_{Ay} + T_{by} & ② \end{cases}$$

$$\begin{cases} T_A \cdot \cos(16,2) = T_B \cdot \cos(28) \\ 1,98 = T_A \cdot \text{sen}(16,2) + T_b \cdot \text{sen}(28) \end{cases}$$

$$1,98 = T_A \cdot 0,28 + \frac{T_A}{0,92} \cdot 0,47$$

$$1,98 = T_A \cdot 0,28 + T_A \cdot 0,51$$

$$\underline{T_A = 2,5 \text{ KN}}$$

$$\alpha = \frac{1,6}{3} = 28°$$

$$\text{tg } \beta = \frac{1,4}{4,8} = 16,2°$$

$$T_A = \frac{T_B \cdot \cos(28)}{\cos(16,2)}$$

$$\underline{T_A = 0,92 \, T_B}$$

$$T_B = \frac{T_A}{0,92}$$

14) $T_A = 0.92 \, T_B$ $T_B = 2.7 \, KN$

$2.5 = 0.92 \, T_B$