

Problem 1

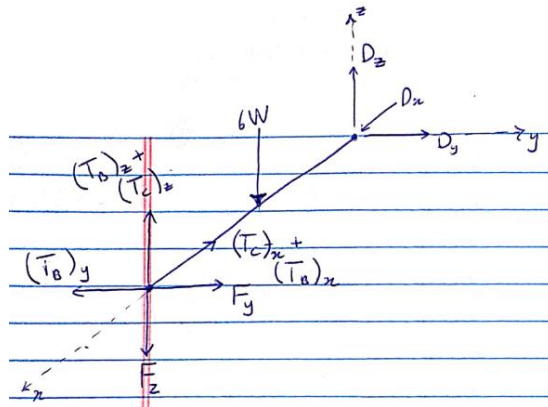
$$F_{AB} = F_{BC} = F_{AC} = 0$$

$$F_{CD} = |P_2| (\text{Tension})$$

$$F_{AD} = |P_1| (\text{Tension})$$

Problem 2

(a)

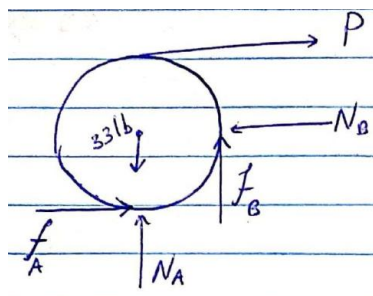


(b) $T_B = \frac{7}{6}F$, $T_C = \sqrt{10} \left(F \left(\frac{\sqrt{3}}{2} - \frac{1}{3} \right) + 3W \right)$

(c) $D_x = \frac{3\sqrt{3}}{2}F + 9W$, $D_y = 0$, $D_z = 3W$

Problem 3

(a)



(b) $P = 9 \text{ lb}$

(c) $\frac{P_{new}}{P_{old}} = 1$