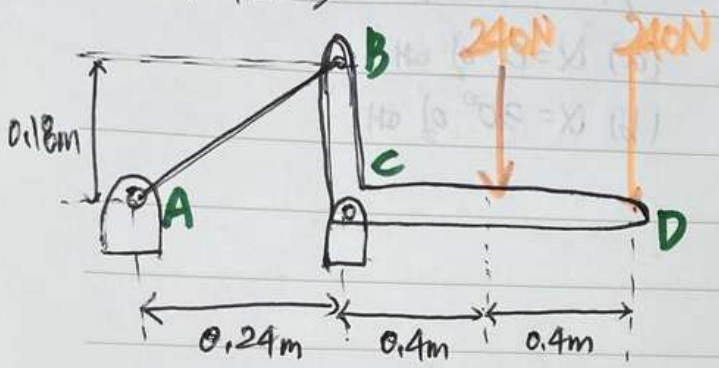
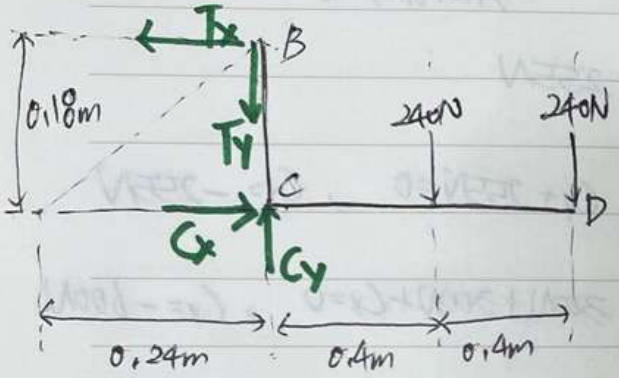
<예제 4.19>



(a) 케이블 AB에 가해지는 힘의 크기

(b) 이때, C에 작용하는 힘.



$\frac{T_y}{T_x} = \frac{0.18m}{0.24m}$, $\therefore T_y = \frac{3}{4}T_x$

(a) $+\circlearrowleft \sum M_C = 0$:

$T_x(0.18m) - (240N)(0.4m) - (240N)(0.8m) = 0$

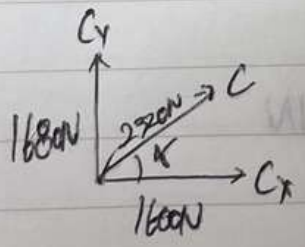
$T_x = +1600N$

$T_y = 1200N$

$T = \sqrt{T_x^2 + T_y^2} = \sqrt{(1600)^2 + (1200)^2} = 2000N$

(b) $\pm \sum F_x = 0$: $C_x - T_x = 0$, $C_x = 1600N$

$+\uparrow \sum F_H = 0$: $C_y - T_y - 240N - 240N = 0$, $C_y = 1680N$



$C = \sqrt{(1600)^2 + (1680)^2} = 2320N$

$\theta = \cos^{-1}\left(\frac{1600N}{2320N}\right) = 46.4^\circ$