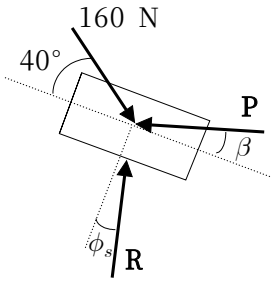
<8.3~8.4절>

8.7 $\mu_s = 0.35$

$\phi_s = \tan^{-1}(0.35) = 19.29°$

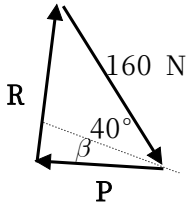


(b) **P**의 크기가 최소 ⇒ **P** ⊥ **R**

$\beta = \phi_s = 19.29°$

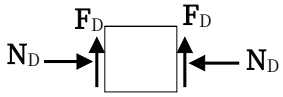
(a) $\beta + 40° = 19.29° + 40° = 59.29°$

$P_{\min} = (160\ \text{N})\cos(59.29°) = 81.7\ \text{N}$



8.27 $W = 750\ \text{N}, \quad h = 0.9\ \text{m}$

$P = W = 750\ \text{N}$

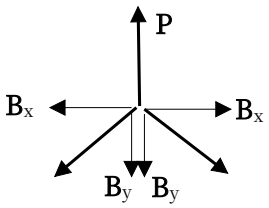


casting에서,

impending slip ⇒ $F_D = \mu_s N_D$

$\uparrow \Sigma F_y = 0 \ ; \ 2F_D - W = 0$

$\Rightarrow \quad F_D = \frac{1}{2}W = \frac{1}{2}(750\ \text{N}) = 375\ \text{N}$

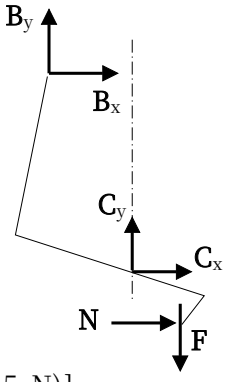


pin A에서

$\uparrow \Sigma F_y = 0 \ ; \ P - 2(F_{By}) = 0$

$\Rightarrow \quad F_{By} = \frac{1}{2}(750\ \text{N}) = 375\ \text{N}$

$F_{Bx} = \frac{.228}{.17} F_{By} = \frac{.228}{.17}(375\ \text{N}) = 502.9\ \text{N}$



link ABCD에서

$N = \frac{F}{\mu_s}, \quad F = F_D = 375\ \text{N}$

$\circlearrowleft \Sigma M_C = 0 \ ;$

$(0.3\ \text{m})\frac{F}{\mu_s} - (0.15\ \text{m})F - (0.9\ \text{m})F_{Bx} - (0.228\ \text{m})F_{By} = 0$

$\Rightarrow \quad \mu_s [(0.15\ \text{m})(375\ \text{N}) + (0.9\ \text{m})(502.9\ \text{N}) + (0.228\ \text{m})(375\ \text{N})]$

$= (0.3\ \text{m})(375\ \text{N})$

$\Rightarrow \quad \mu_s = \frac{112.5\ \text{N}\cdot\text{m}}{594.36\ \text{N}\cdot\text{m}} = 0.1893 \qquad \Rightarrow \qquad \mu_s = 0.19$