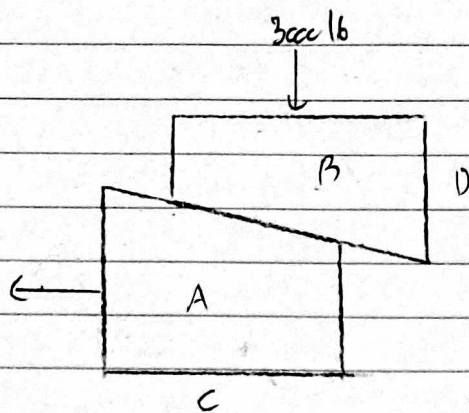


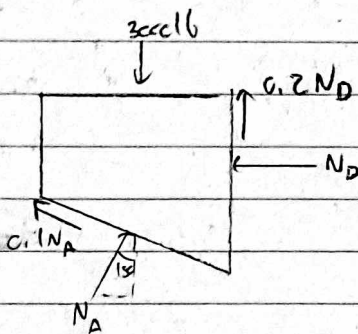
Solutions: 21-5-E.3-MK-02



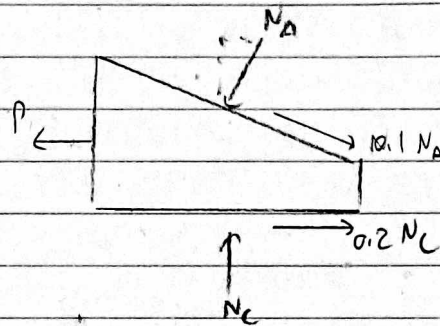
$$\mu_s = 0.2$$

$$\mu_s' = 0.1$$

Block B



Block A



Block B

$$\sum F_x = 0 = N_A \sin 15 - 0.1 N_A \cos 15 - N_D \rightarrow \textcircled{1} 0.1622 N_A - N_D = 0$$

$$\sum F_y = N_A \cos 15 + 0.1 N_A \sin 15 + 0.2 N_D - 3000 \text{ lb}$$

$$\textcircled{2} 0.992 N_A + 0.2 N_D = 3000 \text{ lb}$$

using system solver  $N_A = 2928.4 \text{ lb}$   $N_D = 475.01 \text{ lb}$

Block A  $\sum F_y = 0 = N_C - 2928.4 \cos 15 - 0.1 (2928.4) \sin 15 \rightarrow N_C = 2904.4 \text{ lb}$

$$\sum F_x = -P - 2928.4 \sin 15 + 0.2 (2904.4 \text{ lb}) + 0.1 (2928.4) \cos 15 + 0.2 (475.01)$$

$$P = 105.8 \text{ lb}$$