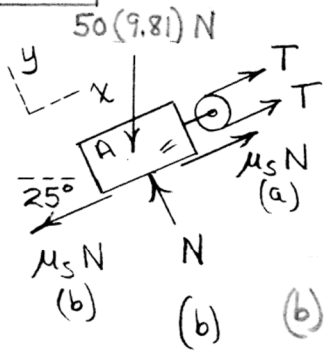
6/12



(a) Motion impends down incline

$\Sigma F_y = 0$: $N = 50(9.81)\cos 25°$

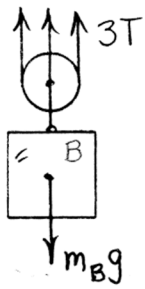
or $N = 445$ N throughout

$\Sigma F_x = 0$: $2T - 50(9.81)\sin 25° + 0.30(445) = 0$, $T = 37.0$ N

(b) (b) Motion impends up incline

$\Sigma F_x = 0$: $2T - 50(9.81)\sin 25° - 0.30(445) = 0$

$T = 170.3$ N



$\uparrow \Sigma F = 0$ $3T - m_B g = 0$, $m_B = \dfrac{3T}{g}$

(a) $m_B = 3(37.0)/9.81 = 11.30$ kg

(b) $m_B = 3(170.3)/9.81 = 52.1$ kg

So $\underline{11.30 \le m_B \le 52.1 \text{ kg}}$