Exercise 5A

(1) At rest $\Rightarrow a = 0$

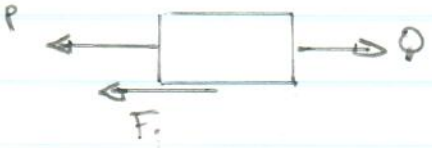
(a) $\rightarrow$ $\Sigma F = 0$: $P - Q - F = 0$

$\therefore F = P - Q$ $+\rightarrow$

(b) $\rightarrow$ $\Sigma F = 0$

$\therefore P + F - Q = 0$

$\therefore F = Q - P$ $+\leftarrow$



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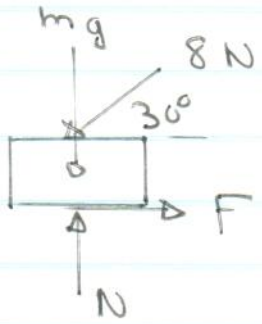
(3) $+\rightarrow$ $\Sigma F_x = 0$

$\therefore 8\cos 30^\circ - F = 0$

$\therefore F = 6,93\ N$ $\rightarrow$



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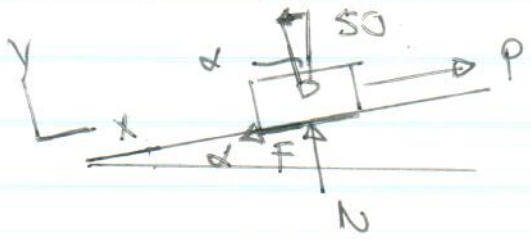
(7) $+\rightarrow$ $\Sigma F_x = 0$



$\therefore -50\sin\alpha - F + P = 0$

$\therefore F = P - 50\sin\alpha$ $+\rightarrow$ — (1)

(a) If $P > 50\sin\alpha \Rightarrow$ From (1)

$F = P - 50\sin\alpha$ $+\rightarrow$

(b) If $P < 50\sin\alpha$

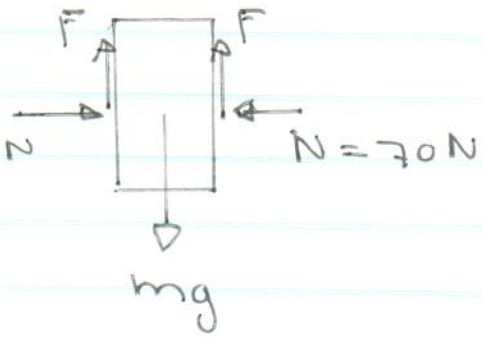
$F = 50\sin\alpha - P$ $+\rightarrow$

(11) $+\uparrow \Sigma F = 0$

$\therefore 2F - mg = 0$

$\therefore 2\mu N - 6(10) = 0$

$\therefore \mu = \frac{6(10)}{2(70)} = 0,429 \quad \left(\frac{3}{7}\right)$



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(13) $+\uparrow \Sigma F = 0$

$2F - mg = 0$

$\therefore 2\mu N - 2(10) = 0$

$\therefore 2(0,3)N - 2(10) = 0$

$\therefore N = 33,3\ N$