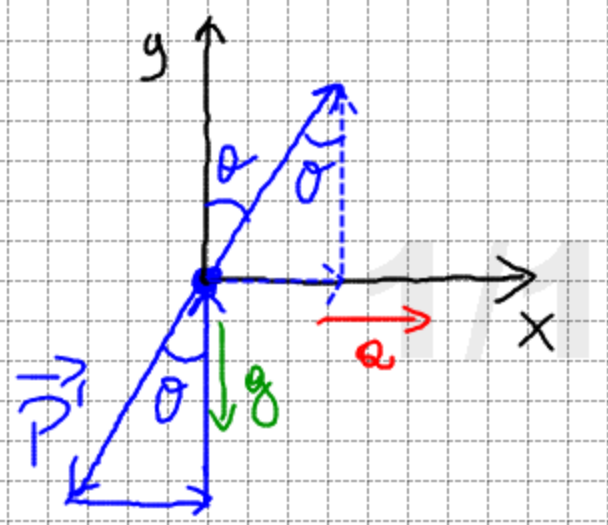
N76 PAG 117

$a = 1{,}2 \ \frac{m}{s^2}$



$x: \ m a_x = P' \operatorname{sen}\theta$

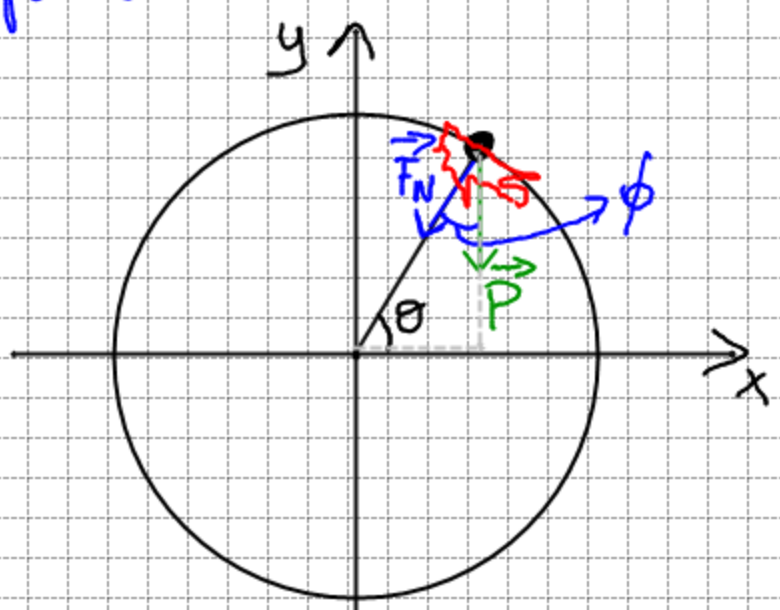
$y: \ m g = P' \cos\theta$

$\operatorname{tg}\theta = \frac{a_x}{g} \qquad a_x = a$

$\theta = \operatorname{tg}^{-1}\left(\frac{a}{g}\right)$

N84

Diagramma del corpo libero di un indumento quando perde il contatto con il cilindro.



$\theta = 70{,}0°$

$\phi = 90 - \theta \qquad P\cos\phi = P\cos(90-\theta) = P\operatorname{sen}\theta$

Quando i vestiti perdono contatto $F_N = 0$

$F_C = m\frac{v^2}{r} = F_N + P\operatorname{sen}\theta$

$m\frac{v^2}{r} = 0 + P\operatorname{sen}\theta$

$m\frac{v^2}{r} = mg\operatorname{sen}\theta \qquad v = \frac{2\pi r}{T}$

$g\operatorname{sen}\theta = \frac{4\pi^2 r}{T^2} \qquad g\operatorname{sen}\theta = \frac{4\pi^2 r}{T^2}$

$T = \sqrt{\frac{4\pi^2 r}{g\operatorname{sen}\theta}} = 2\pi\sqrt{\frac{r}{g\operatorname{sen}\theta}} = 2\pi\sqrt{\frac{0{,}32\,m}{9{,}80\frac{m}{s^2}\cdot \operatorname{sen}70°}}$

$= 1{,}17\ s$

$f = \frac{1}{T} = 0{,}85 \ \frac{giri}{s}$