

Page 174 # 17 - Pushing a 25 kg lawnmower with a force of 150 N at 35 degrees to horiz.

$\sin 35 = \frac{F_y}{150}$
 $F_y = 85 \text{ N}$

$\cos 35 = \frac{F_x}{150}$
 $F_x = 122.87 \text{ N}$

$F_g = 25(9.81) = 245.25 \text{ N}$

$N = F_g + F_y = 245.25 + 86.04 = 331.29 \text{ N}$

$\mu = \frac{f}{N} = \frac{85}{331.29} = 0.26$

$ma = F \cos \theta - 85$
 $a = \frac{F \cos \theta - 85}{m}$
 $a = \frac{150 \cos 35 - 85}{25} = 1.5 \text{ m/s}^2$

Apr 12-8:40 AM