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Thread: [\[Physics\] WEBASSIGN - Friction + Application](#)

Ordium - December 22, 2014, 7:32 pm

WARNING: Lots of images.

Between my friend and myself, we've tried all of these and are beyond stumped. Any help (equations, answers, videos, anything) would be greatly appreciated. These are due tonight, unfortunately.

"Friction" Spoiler ([Click to View](#))

Adlil - December 22, 2014, 10:03 pm

I'll go over question 2 and hopefully you can apply that to all of them. Static friction is used if it's still and kinetic is for if it's moving. Start with static, if you see that it's moving, switch to kinetic.

2. downwards force = gravitational force + push force = $m \cdot g + F \cdot \sin(25) = 36 \cdot 9.8 + F \cdot .422$

force to the right = $F \cdot \cos(25) = .91 \cdot F$

Force to the left = static friction * force going downwards = $.1 \cdot (36 \cdot 9.8 + F \cdot .422) = 35.28 + F \cdot .0422$

Force required to make it move would be force to the right > force to the left. So

$.91 \cdot F > 35.28 + F \cdot .0422$

$(.91 - .0422)F > 35.28$

$.8678F > 35.28$

$F > 40.65$ Newtons.

Part b.

Now that it's moving we use the kinetic friction, and it's clarified we're using the same force. So

Force to the right = $.91 \cdot 40.65$

Force to the left = $.03 \cdot (352.8 + 40.65)$

Net force = $.91 \cdot 40.65 - .03 \cdot (352.8 + 40.65) = 25.188 = m \cdot a$

$a = 25.188/m = 25.188/36 = .7 \text{ m/s}^2$