10) $m = 5\ kg$

$v = 10\ m/s$

$t = 4\ s$

$p = ?$

$p = mv$

$= (5\ kg)(10\ m/s)$

$= 50\ \frac{kg\ m}{s}$

---

11) $m = .5\ kg$

$F_f = 1.2\ N$

$\mu_k = ?$

$F_f = \mu F_N$

Given is the mass you have to convert to weight first in order to get the F_N

$F_g = ma$

$= (.5\ kg)(9.81\ m/s^2)$

$= 4.905\ kg\ m/s^2$ or N

Solve for μ

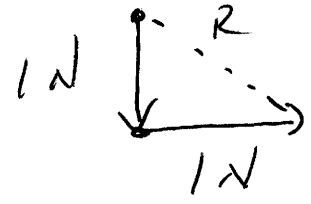
$\mu = \frac{F_f}{F_N} = \frac{1.2\ N}{4.905\ N} = .245$

12) $a = \frac{F_{net}}{m}$ greatest acceleration will be caused by greatest unbalanced force on the block

2 & 4 are balanced $\Rightarrow$ no a

3 is unbalanced to the east of 1N

* 1 you have to do vector addition



$1^2 + 1^2 = 2^2$

$2 = R^2$

$1.4 = R$

Largest unbalanced force $\Rightarrow$ greatest a

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13) $F = 175\ N$

$m = 87.5\ kg$

$h = .350\ m$

$g = ?$

$g = \frac{F_g}{m} = \frac{175\ N}{87.5\ kg}$

$= 2\ \frac{N}{kg}$

---

14) Friction causes the car to stop

Friction creates heat

$\Rightarrow$ internal energy increases

15) decreases resistance

short, fat, cold, silver wires make the best conductors because they have the least resistance

$R = \frac{\rho L}{A}$

x 1) ↑ L ⇒ $R = \frac{\rho \uparrow L}{A} \uparrow$

x 2) ↑ ρ ⇒ $R = \frac{\uparrow \rho L}{A}$

* 3) decrease temperature

think superconductors that must be ~~[illegible]~~ cooled to very low temps ⇒ ↓ R

x 4) ↓ diameter ⇒ ↓ a

$\uparrow R = \frac{\rho L}{A \downarrow}$

16.) Velocity is tangent to the circle at that point in time in the direction of rotation ↓ v

a_c is always directed toward the center of the circle ← a