

Quiz 4c

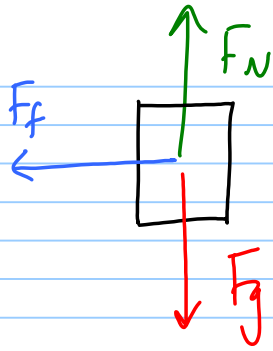
Note Title

27/09/2012

An 88 kg hockey player is gliding forwards at 5.5 m/s. In order to stop himself he generates a friction force of 950 N.

- a. Draw a free-body-diagram of the hockey player while he is stopping.
- b. Determine the acceleration of the hockey player.
- c. How far does he travel while stopping?

a.)



- No F_{app} ! ✓
- $F_g = F_N$

b.)

$$F_{net} = -F_f = ma \quad \checkmark \quad a = -\frac{F_f}{m} = -\frac{(950N)}{88kg}$$

$$= -10.80 m/s^2$$

$$= \boxed{-11 m/s^2} \quad \checkmark$$

c.) $V = 0$

$$V_0 = 5.5 m/s$$

$$a = -10.80 m/s^2$$

$d =$

$t =$

$$V^2 = V_0^2 + 2ad \quad \checkmark$$

$$d = \frac{V^2 - V_0^2}{2a} = \frac{0^2 - (5.5 m/s)^2}{2(-10.80 m/s^2)}$$

$$= \boxed{1.4 m} \quad \checkmark$$