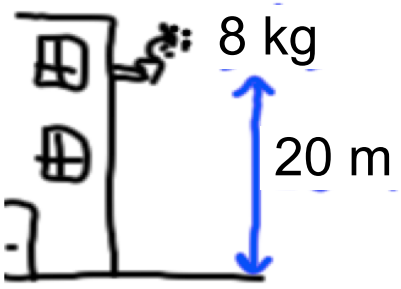
D3: Gravitational PE

GPE = mgh
= (kg)(10)(meters)



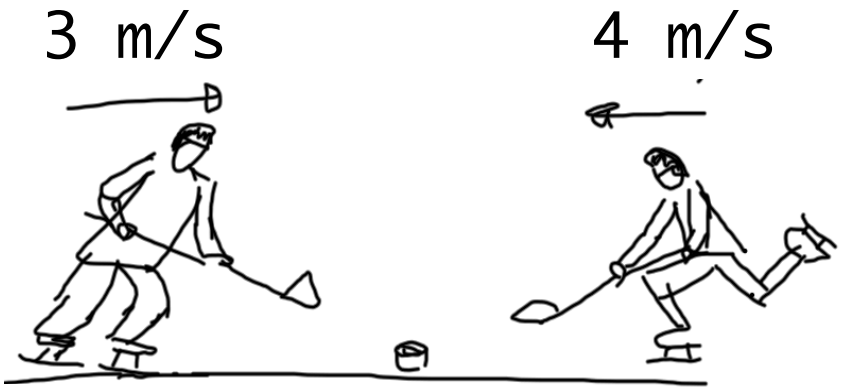
1. An 8 kilogram plant is dropped from a height of 20 meters.
   a) What is the Grav PE of the plant?
   b) How much Kinetic will it have just before it hits the ground?

a) Use the formula:
GPE = mgh
= (8 kg)(10)(20 m)
= 1600 J

b) All the GPE will become Kinetic at the bottom: 1600 J

D3: Kinetic E

$$KE = \left(\frac{m}{2}\right)(v^2)$$



1. Calculate the Kinetic Energy of each player.
   a) Which one has more?
   b) Which player could hurt you more?

$$KE = \left(\frac{60}{2}\right)(3^2)$$
$$= (30)(9)$$
$$= 270\ J$$

$$KE = \left(\frac{40}{2}\right)(4^2)$$
$$= (20)(16)$$
$$= 320\ J$$

a) The person on the right has more KE.
b) More KE means more hurt, so the answer is the person on the right.