

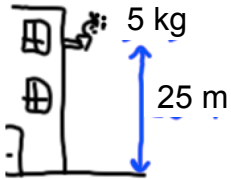
Wk 27 Energy

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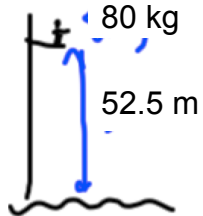
D3: Gravitational PE

$$\text{GPE} = mgh$$

$$= (\text{kg})(10)(\text{meters})$$



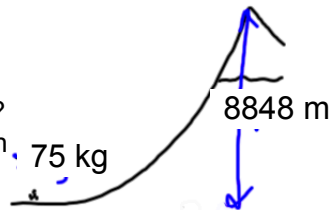
1. A 5 kilogram plant is dropped from a height of 25 meters.
- What is the Grav PE of the plant?
 - How much Kinetic will it have just before it hits the ground?



2. For his high jump, Dana Kunze jumped from a height of 52.5 meters. His mass was about 80 kilograms
- What was Dana's Grav PE?
 - How much Kinetic will he have just before he hits the water?

3. The 75 kilogram climber is going to climb Mt. Everest (height 8848 meters).

- What will the climber's Grav PE be at the top?
- If she were to fall down Mt Everest, how much Kinetic would she have at the bottom?

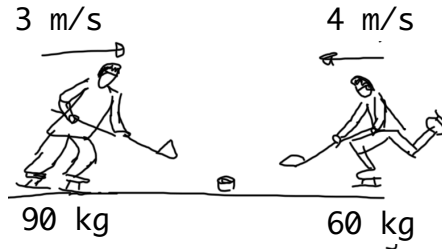


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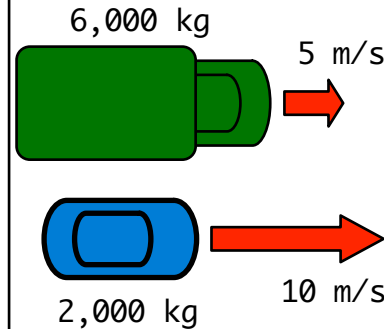
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D3: Kinetic E

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



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



2. Calculate the Kinetic Energy of each vehicle.
- Which one has more?
 - Which one is harder to stop if the brakes fail?

3. The Chelyabinsk meteor that hit back on Feb 15, 2013 was about 9,000,000 kg and it was moving at about 18,000 m/s.

- How much Kinetic Energy did it have?
- When it hit the atmosphere, what kind of energy did it turn into?
- Why do we worry about meteors like this one?