

Energy 1

D2: Gravitational PE

name: _____

SHOW WORK

IDEALLY = Ignore drag, friction and anything else that might convert energy to heat.

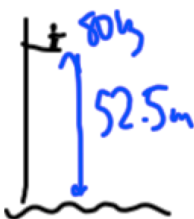
Gravitational Potential Energy

$$GravPE = mgh$$

Mass (kg) →
 10 m/s^2 →
Height (m) →

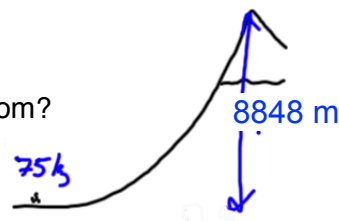


1. A 5 kilogram plant is dropped from a height of 25 meters.
 - a) What is the Grav PE of the plant?
 - b) How much Kinetic will it have just before it hits the ground?



2. For his high jump, Dana Kunze jumped from a height of 52.5 meters. His mass was about 80 kilograms
 - a) What was Dana's Grav PE?
 - b) 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).
 - a) What will the climber's Grav PE be at the top?
 - b) If she were to fall down Mt Everest, how much Kinetic would she have at the bottom?



4. If your 1000 kg car had 50,000 Joules of Kinetic Energy, how high could it go without using any more gas?
5. A crane can do 100,000 J of work in a minute. How many kilograms of mass can it lift up to a height of 10 m?
6. On Jupiter, It would take 520 J of work to lift 10 kg to a height of 2 m. What is one g on Jupiter?
7. In the strong man video, to complete the keg toss, the contestant must throw a total of 175 kg to a height of 5 meters. How much work is that?
8. How much work do you do climbing the steps here at school?
- Your mass in kilograms = your weight in pounds \div 2.2.
 - Height of steps = 4 meters.
 - Multiply by how many times you climb the steps each day.