Kinetic and gravitational ENERGY

1. Find the kinetic energy of a 6.00kg object travelling east at 4.00m/s.

2. Find the gravitational potential energy of a 6.00kg object 4.00m above the ground (assume that the ground is at h=0m)

3. Find the mechanical energy of a 6.00kg object 4.00m above the ground (assume that the ground is at h=0m), travelling at 4.00m/s.

4. Find the change in kinetic energy of a 500.0g mass that accelerates from 4.00m/s to 6.00m/s.

5. Find the change in kinetic energy of a 500.0g mass that accelerates from 6.00m/s to 4.00m/s.

6. How much gravitational potential energy will a 25.0kg mass gain if it is lifted 2.00m up?

7. If a 25.0kg mass is dropped from rest from a height of 2.00m, how much kinetic energy will it have as it lands?

8. Find the speed reached by a 25.0kg mass that fall 2.00m from rest.

9. Find the maximum height reached by a ball thrown upward at 9.0m/s.

10. A mass slides, from rest, down a frictionless ramp from a height of 4.00m. Find the speed of the mass at the bottom of the ramp.

11. Find the total mechanical energy of a 138000kg jet flying at an altitude of 6.50**km** above the Earth at a speed of 148m/s.

12. A roller coaster rolls down a 12.0m high hill and then up a 5.00m hill. The speed of the roller coaster at the crest of the 12.0m high hill was 1.32m/s. Assuming no friction find the speed of the cart at the top of the 5.00m hill. **(make a drawing!)**

13. Find the total mechanical energy (Ek+Epg) of a 138000kg jet flying at an altitude of 6.50**km** above the Earth at a speed of 462km/h.

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