Projectile Energy Notes

1. Assume mechanical energy is conserved. A 15 kg projectile is dropped from rest at a height 157 meters on a planet where g = 19 m/s/s. What is the impact speed of the projectile in m/s?

2. Assume mechanical energy is conserved. A projectile is launched at an unknown upward angle at 24 m/s from a cliff at height 159 meters on a planet where g = 24 m/s/s. What is the impact speed of the projectile in m/s?

3. Assume mechanical energy is conserved. A projectile is launched upward from a spring. The energy stored within the spring was initially 1,007 Joules and its kinetic energy at height 2 meters is 3 Joules. What is the projectile's mass in kg? g = 11 m/s/s

4. Assume mechanical energy is conserved. A projectile is launched at an unknown angle from the top of a cliff at height 9 meters. The object has 9 Joules of kinetic energy at launch and 12 Joules of kinetic energy just before it impacts the ground at height 0 meters. What is the mass of the projectile in kg? g = 8 m/s/s

5. Assume mechanical energy is conserved. A 9 kg projectile is launched at an unknown angle from the bottom of a cliff. The object has 1,676 Joules of kinetic energy at launch and 15 Joules of kinetic energy just before it impacts the top of the cliff. What is the height of the cliff top in meters? g = 11 m/s/s

6. Assume mechanical energy is conserved. A projectile with unknown mass is dropped from rest at a height 157 meters on a planet where g = 19 m/s/s. What is the impact speed of the projectile in m/s?