

Worksheet: Energy

1. What is the KE of a baseball having a mass of 0.14 kg that is thrown with a velocity of 18 m/s?

If the baseball above was initially at rest, how much work was done on it to give this kinetic energy?

2. A racecar has a mass of 1500 kg. What is its KE in joules if it has a speed of 110 km/hr?

3. Relative to the floor, what potential energy does a 2.5 kg package have that sits on a shelf 2.2 m high?

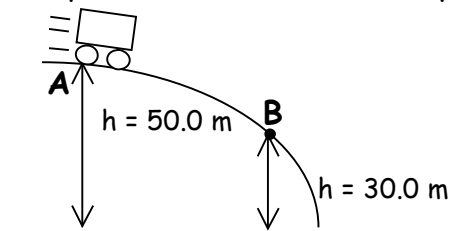
What work was done to give it this PE?

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Hint: Use law of conservation of mechanical energy to solve remaining problems.

4. A 500.0 kg pig is standing at the top of a muddy hill on a rainy day. The hill is 100.0 m long with a vertical drop of 30.0 m. The pig slips and begins to slide down the hill. What is the pig's speed at the bottom of the hill?

5. Frank, a San Francisco hot dog vendor, has fallen asleep on the job. When an earthquake strikes, his 3.00×10^2 kg hot dog cart rolls down Nob Hill and reaches point A at a speed of 8.00 m/s. How fast is the hot dog cart going at point B when Frank finally wakes up and starts to run after it?



6. While on the moon, the Apollo astronauts enjoyed the effects of a small gravity. If Neil Armstrong jumped up on the moon with an initial speed of 1.51 m/s to a height of 0.700 m, what amount of gravitational acceleration did he experience?
7. In a wild shot, Bo flings a pool ball of mass m off a 0.68 m high pool table, and the ball hits the floor with a speed of 6.0 m/s. How fast was the ball moving when it left the table?

