

More Projectile Motion (Horizontally Launched)

Name:

Block:

1. A ball rolls off of a table with a speed of 3.2 m/s. The table is 1.5 m high. How far away from the base of the table does the ball travel?
2. A coin rolls off the edge of a table. The coin was travelling with a speed of 0.40 m/s. It lands 0.20 m away from the table leg (which is straight down from the table edge). How high is the table?
3. A car travelling at 72 km/h drives off a cliff 400. m high. How far from the base of the cliff does it hit the ground?
4. A car drives off a 90. m high cliff and lands 72 m from the base of the cliff. At what speed did the car drive off the cliff?
5. A cannon ball is shot horizontally at 30.0 m/s and falls for 5.0 s.
  - a) How far does it fall vertically?
  - b) How far does it move horizontally?
6. A baseball is hit horizontally. It leaves the bat with a speed of 40.0 m/s. The batter hit the ball at a height of 1.00 m above the ground. What distance does it travel before it hits the ground?
7. A rock is thrown horizontally from the top of a 12 m high building at a speed of 14 m/s. There is a 8.0 m high tree 11 m from the base of the building. Does the rock make it over the tree?
8. For a horizontally-launched projectile, draw the shape of each of the following graphs (linear, parabolic, exponential, constant, etc.):
  - a) horizontal displacement vs. time
  - b) vertical displacement vs. time
  - c) horizontal velocity vs. time
  - d) vertical velocity vs. time
  - e) horizontal acceleration vs. time
  - f) vertical acceleration vs. time