# Projectile Motion (Horizontally Launched)

1) An object is thrown horizontally at a velocity of 10.0 m/s from the top of a 90.0 m building.

   a) Sketch an image of the object being thrown from the building and label the sketch appropriately.
   b) Calculate the time that the object is in the air.
   c) Calculate the distance from the base of the building that the object will hit the ground.
   d) Calculate the velocity that the object will impact the ground.

2) An object is thrown horizontally at a velocity of 25.0 m/s from the top of a 150 m building.

   a) Sketch an image of the object being thrown from the building and label the sketch appropriately.
   b) Calculate the time that the object is in the air.
   c) Calculate the distance from the base of the building that the object will hit the ground.
   d) Calculate the velocity that the object will impact the ground.

3) An object is thrown horizontally at a velocity of 18.0 m/s from the top of a cliff. The object hit the ground 100.0 m from the base of the cliff.

   a) Sketch an image of the object being thrown from the cliff and label the sketch appropriately.
   b) Calculate the time that the object is in the air.
   c) Calculate the height of the cliff.
   d) Calculate the velocity that the object impacted the ground.

4) An object is thrown horizontally at a velocity of 20.0 m/s from the top of a cliff. The object hit the ground 48.0 m from the base of the cliff.

   a) Sketch an image of the object being thrown from the cliff and label the sketch appropriately.
   b) Calculate the time that the object is in the air.
   c) Calculate the height of the cliff.
   d) Calculate the velocity that the object impacted the ground.

5) An object is thrown horizontally from the top of a building at a velocity of 15.0 m/s. The object takes 5.50 s to reach the ground.

   a) Sketch an image of the object being thrown from the building and label the sketch appropriately.
   b) Calculate the distance travelled by the object horizontally.
   c) Calculate the height of the building.
   d) Calculate the velocity that the object impacted the ground.