Physics 11 OKM

Name: _____ Date: _____

Block: ____

Projectile Motion

Objects Launched Horizontally

1. A stone is thrown horizontally at a speed of +5.0 m/s from the top of a cliff 78.4 m high.
   a. How long does it take the stone to reach the bottom of the cliff?

   b. How far from the base of the cliff does the stone strike the ground?

   c. What are the horizontal and vertical components of the velocity of the stone just before it hits the ground?
      i. Horizontal

      ii. Vertical

   d. What is the magnitude and direction of the velocity of the projectile upon impact with the ground? (Draw a diagram)

2. A steel ball rolls with constant velocity across a tabletop 0.950 m high. It rolls off and hits theground +0.352 m horizontally from the edge of the table. How fast was the ball rolling?

3. An auto, moving too fast on a horizontal stretch of mountain road, slides off the road, falling into deep snow 43.9 m below the road and 87.7 m beyond the edge of the road.
    a. How long did the auto take to fall?

    b. How fast was it going when it left the road? (in m/s and km/h)

    c. What was it's acceleration 10 m below the edge of the road?