1. **Notice the distance the orange falls is negative because it falls in a negative direction.**
   $y = -2.6m$
   $g = -9.81m/s^2$
   $t = ?$
   $y = v_0t + 1/2at^2$
   The initial vertical velocity of the orange is zero
   $t = \text{sqrt}\ (2y/g)$
   $t = \text{sqrt}\ [(2)(-2.6m)/-9.81m/s^2]$
   $t = 0.73s$
2. **$y = -925m$**
   $g = -9.81m/s^2$
   $t = ?$
   $y = v_ot + 1/2gt^2$
   $t = \text{sqrt})2y/g)$
   $t = \text{sqrt}[(2)(-925m)/-9.81m/s^2]$
   $t = 13.9s$
3. **$y = -1.6m$**
   $g - -9.81m/s^2$
   $t = ?$
   $y = v_0t + 1/2gt^2$
   $t = \text{sqrt}(2y/g)$
   $t = \text{sqrt}[(2)(-1.6m)/-9.81m/s^2]$
   $t = 0.57s$
4. **v_x represents velocity along the horizontal $v_h = 1100m/s$**
   Remember the motion along the horizontal is uniform, therefore there is no acceleration.
   $t = 0.57s$
   $x = ?$
   $x = vt$
   $x = (v_x)t$
   $x = (1100m/s)(0.57s)$
   $x = 627m$ with two significant digits the answer would be $630m$
5. **$y = -3.6m$**
   $g = -9.81m/s^2$
   $t = ?$
   $y = v_0t + 1/2gt^2$
   The initial velocity of the hammer along the y-axis is zero.
   $t = \text{sqrt}(2y/g)$

$t = \text{sqrt}[(2)(-3.6m)/-9.81m/s^2]$

$t = 0.86s$

6. The velocity along the x-axis is v_x

   $v_x = 3.5m/s$

   $t = 0.86s$

   $x = ?$

   $x = (v_x)t$

   $x = (3.5m/s)(0.86s)$

   $x = 3.01m$

   $x = 3.0m$

7. $y = -52m$

   $g = -9.81m/s^2$

   $t = ?$

   $y = v_0t + 1/2gt^2$

   $t = \text{sqrt}(2y/g)$

   $t = \text{sqrt}[(2)(-52m)/-9.81m/s^2]$

   $t = 3.255986s$

   $t = 3.26s$

   $x = 148m$

   $v_x = ?$

   $v_x = x/t$

   Notice that the time was used before it was put into significant digits.

   $v = 148m/3.255986s$

   $v_x = 45.5m/s$