

Vertical Projectile Word Problems Worksheet 1

$$\bar{v} = \frac{\Delta x}{\Delta t}, \quad \bar{v} = \frac{v_o + v_f}{2}, \quad \bar{a} = \frac{\Delta v}{\Delta t}, \quad v_f = v_o + at,$$

$$x = V_o t + \frac{1}{2}at^2, \quad v_f^2 = v_o^2 + 2a\Delta x, \quad g = 9.8 \frac{m}{s^2} \approx 10 \frac{m}{s^2}$$

Round to one decimal place with at least one significant digit.

1. Emily threw a ball straight up in the air with a velocity of 23 m/s. How high will the ball be after 3.2 seconds?
2. Marshall shot an arrow straight up in the air and it came down and hit him in the head (luckily he was wearing a helmet!) in 8.5 seconds. What velocity did the arrow have when it hit him in the head?
3. Hanna was shot out of a cannon with a velocity of 32 m/s. How high will she be when her velocity is -5.4 m/s?
4. Jason shot a bb straight up in the air with a velocity of 105 m/s. What will the velocity of the bb be when it is at a height of 203 m?
5. A projectile launcher launches a ball bearing to a height of 8.9 m. What is the muzzle velocity of the launcher?