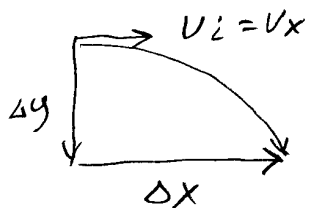


1° Honors Physics – Flat Projectile quiz 8 10-08-02

A rock is thrown horizontally off a 100 m high cliff at 25.0 m/s. (a) How long does it take to hit? (b) How far from the base does it hit?



$$\begin{aligned}
 t &= \text{---} s \\
 \Delta X &= \text{---} m \\
 \Delta y &= -100m \\
 V_x &= 25 \frac{m}{s} \\
 a_y &= -9.8 \frac{m}{s^2} \\
 a_x &= 0 \frac{m}{s^2} \\
 V_{iy} &= 0 \frac{m}{s}
 \end{aligned}$$

$$\begin{aligned}
 \Delta y &= V_{iy}t + \frac{1}{2}a_yt^2 \\
 t &= \sqrt{\frac{2\Delta y}{a_y}} \\
 &= \sqrt{\frac{2(-100m)}{-9.8 \frac{m}{s^2}}}
 \end{aligned}$$

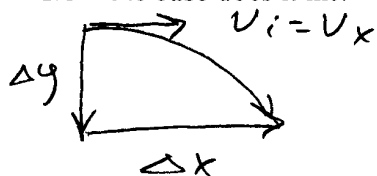
$$\begin{aligned}
 \Delta X &= V_x t \\
 &= 25 \frac{m}{s} (4.52s)
 \end{aligned}$$

b) $\Delta X = 113 m$

a) $t = 4.52 s$

3° Honors Physics – Flat Projectile quiz 8 10-08-02

A rock is thrown horizontally off a 150 m high cliff at 35.0 m/s. (a) How long does it take to hit? (b) How far from the base does it hit?



$$\begin{aligned}
 t &= \text{---} s \\
 \Delta X &= \text{---} m \\
 \Delta y &= -150m \\
 V_x &= 35 \frac{m}{s} \\
 a_y &= -9.8 \frac{m}{s^2} \\
 a_x &= 0 \frac{m}{s^2} \\
 V_{iy} &= 0 \frac{m}{s}
 \end{aligned}$$

$$\begin{aligned}
 \Delta y &= V_{iy}t + \frac{1}{2}a_yt^2 \\
 t &= \sqrt{\frac{2\Delta y}{a_y}} \\
 &= \sqrt{\frac{2(-150m)}{-9.8 \frac{m}{s^2}}}
 \end{aligned}$$

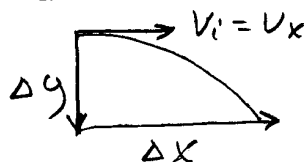
$$\begin{aligned}
 \Delta X &= V_x t \\
 &= 35 \frac{m}{s} (5.53s)
 \end{aligned}$$

b) $\Delta X = 194 m$

a) $t = 5.53 s$

8° Honors Physics – Flat Projectile quiz 8 10-09-02

A rock is thrown horizontally off a 175 m high cliff at 32.5 m/s. (a) How long does it take to hit? (b) How far from the base does it hit?



$$\begin{aligned}
 t &= \text{---} s \\
 \Delta X &= \text{---} m \\
 \Delta y &= -175m \\
 V_x &= 32.5 \frac{m}{s} \\
 a_y &= -9.8 \frac{m}{s^2} \\
 a_x &= 0 \frac{m}{s^2} \\
 V_{iy} &= 0 \frac{m}{s}
 \end{aligned}$$

$$\begin{aligned}
 \Delta y &= V_{iy}t + \frac{1}{2}a_yt^2 \\
 t &= \sqrt{\frac{2\Delta y}{a_y}} \\
 &= \sqrt{\frac{2(-175m)}{-9.8 \frac{m}{s^2}}}
 \end{aligned}$$

$$\begin{aligned}
 \Delta X &= V_x t \\
 &= 32.5 \frac{m}{s} (5.98s)
 \end{aligned}$$

$\Delta X = 194 m$

$t = 5.98 s$