



Nov 4-9:05 AM

(x)  $V_x = V_{0x}$   
 $\Delta x = \frac{1}{2}(V_{0x} + V_x)t$   
 $\Delta x = V_{0x}t$

Big 5 for horizontal direction.

(y)  $V_y = V_{0y} + gt$   
 $\Delta y = \frac{1}{2}(V_{0y} + V_y)t$   
 $\Delta y = V_{0y}t + \frac{1}{2}gt^2$   
 $\Delta y = \frac{V_y^2 - V_{0y}^2}{2 \cdot g}$

Big 5 for vertical direction.

Nov 4-9:29 AM

(68.)

The diagram shows a stick figure on the ground labeled "EARTH". To the right, a rectangular frame is moving upwards with velocity  $v_0$ . Inside the frame, a stick figure is holding a red ball and a blue ball. The balls are also shown with an upward velocity  $v_0$ . The stick figure inside the frame has a rainbow-colored hairdo.

Both balls will rise and fall in unison as seen from the frame of reference of earth.

Nov 4-9:52 AM

The diagram shows a cliff with a coordinate system where the vertical axis is  $y$  and the horizontal axis is  $x$ . A projectile is fired horizontally from the edge of the cliff with an initial velocity  $v_0$ . The intended path (aim) is shown as a horizontal dashed line. The actual path due to free fall in the  $y$ -direction is shown as a blue dashed curve that drops below the intended path.

A projectile fired horizontally will not land on the other end (at the same elevation), because the moment projectile is fired it is in the free fall.

Nov 4-12:49 PM