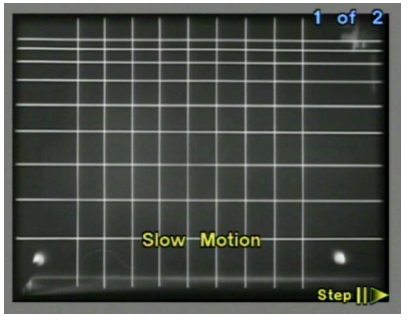
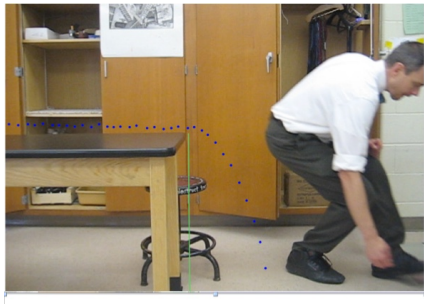
The Independence of X and Y



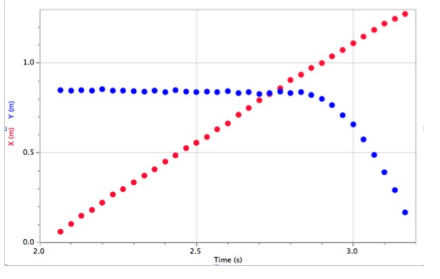
1. Take a look at the projected & dropped video at mrmont.com. It shows a ball dropped at the same time another is projected off of a horizontal trough. Pay close attention to the grid at the end.

Question: Looking at the spacing on the grid, what kind of motion did the projected ball have in the x? What kind of motion did they both have in the y?



Question: For the projected ball, did the motion in the x affect the falling in the y? Did the force of gravity (weight) in the y affect the constant motion in the x?

2. Open the Ball Rolls Off Table file from mrmont.com.



Questions: The blue graph shows the motion in the y direction for the ball. At about what time did it leave the table?

Question: The red graph shows the constant motion in the x direction. Did it change at all when the ball left the table and gravity was able to make it fall in the y?

3. If a student were instructed to throw a ball straight up while traveling to the right at a constant speed, do you think the upward throw would mess up the ball's forward motion or vice versa?