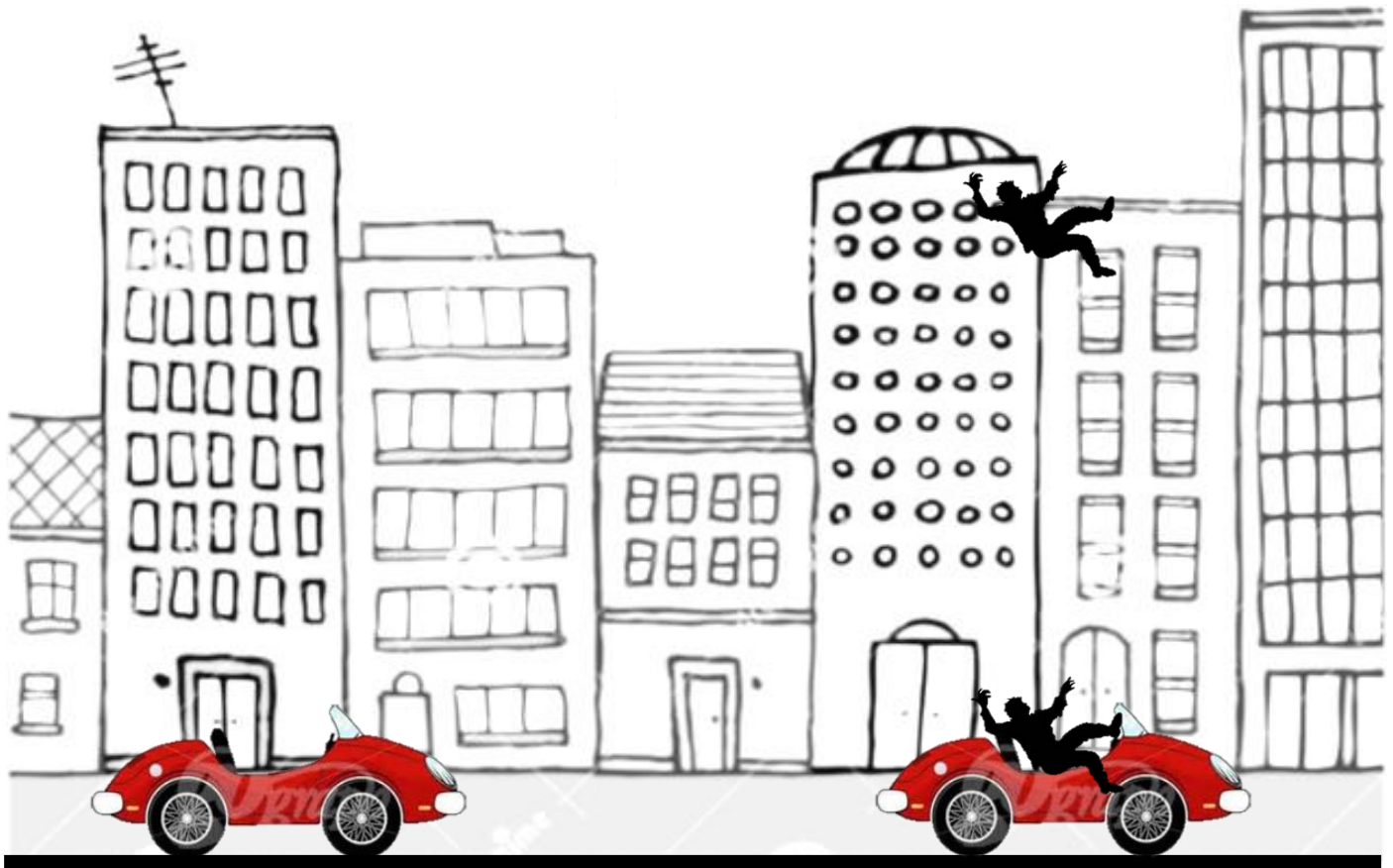


Objective –

1. A stuntman is falling from a building and your objective is to catch him in a buggy moving at a constant velocity. **You must CALCULATE WHERE the car should be on the track when the stuntman starts falling so that the stuntman will get caught when the car is directly underneath the stuntman's point of release.**

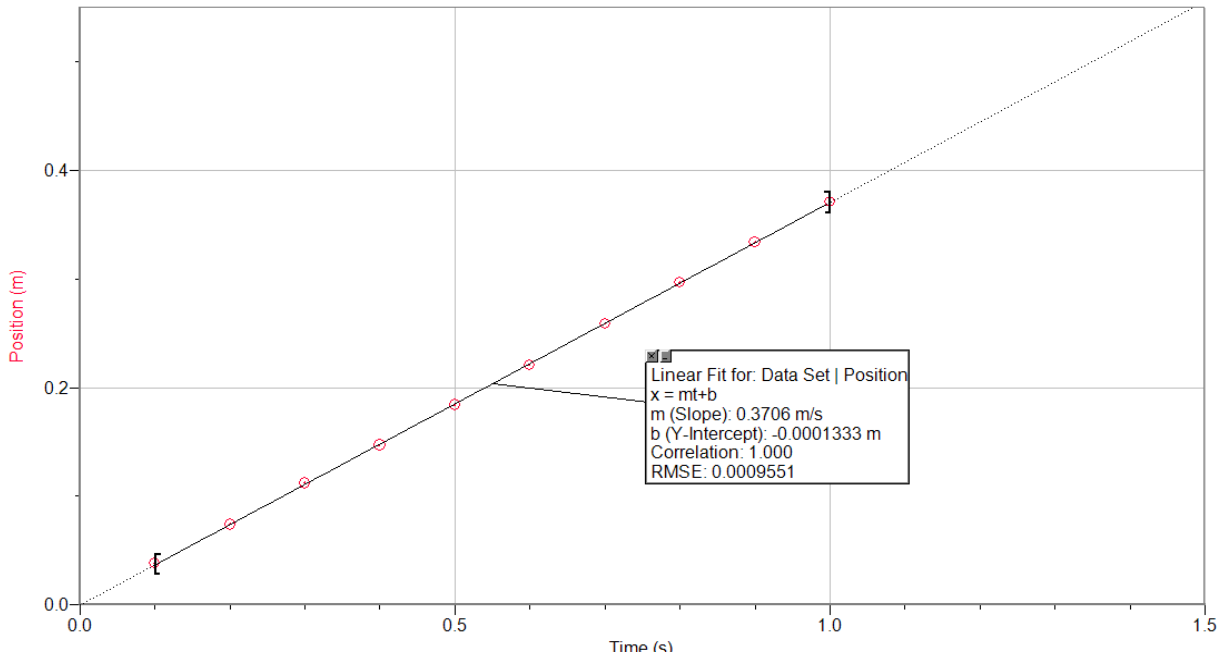
Diagram

This scene starts with the car to the left of the picture moving at a constant velocity and the man has just fallen off the building. When the scene ends the man is caught by the car. Where does the car need to start from in order to catch the man?



Data

- Position vs. time graph for the constant velocity buggy.



- The stuntman falls from a height of 307.5 inches. (1 inch = 2.52 cm)
- The height of the buggy above the ground is 13.5 cm.
- Assume the stuntman starts at rest and that he will have an impact velocity when caught of something that is not zero.

Calculations –

- Show all variables in list form for the buggy and for the falling stuntman.
- Show all equations used
- Show all the algebra for the final answer.