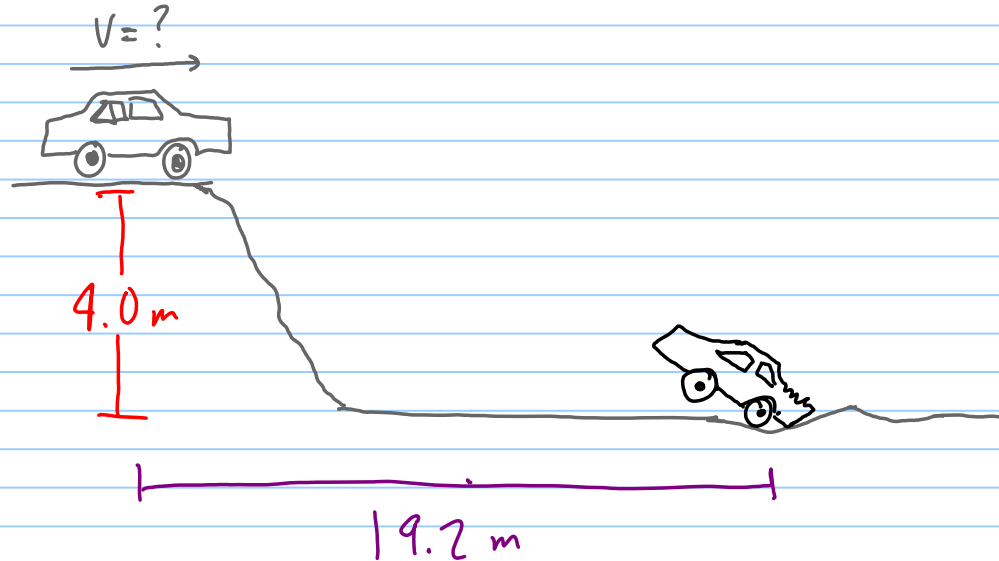


The police are called to the scene of an accident. A car slid off the road and fell into an embankment, crashing into the ground below. The speed limit is 60 km/h and the driver claims that he was not speeding.

Use the information below to find the initial velocity at which the car left the road and determine whether the driver is lying or not.



X	Y
V_x $d_x = 19.2 \text{ m}$ $t = 0.9035$	V_y $V_{y0} = 0$ $a_y = -9.8$ $d_y = -4.0$ t

$$V_x = \frac{d_x}{t} = \frac{19.2 \text{ m}}{0.9035 \text{ s}} = 21.25 \text{ m/s}$$

$$d = v_0 t + \frac{1}{2} a t^2$$

$$d = \frac{1}{2} a t^2$$

$$t = \sqrt{\frac{2d}{a}} = \sqrt{\frac{2(-4.0)}{-9.8}} = 0.9035 \text{ s}$$

In Km/h: $21.25 \text{ m/s} \times 3.6 = 77 \text{ Km/h} > 60 \text{ Km/h}$

\therefore He was speeding!