A car drives off a vertical cliff that is 122.5m tall. If the car lands 100m from the base of the cliff what was the cars speed as it drove off the cliff.

It takes time t to fall from cliff with h. We find that time and determine horizontal speed of car.

$$\begin{cases} h = \dfrac{gt^2}{2} \to t = \sqrt{\dfrac{2h}{g}} \\ l = V_x t \to V_x = \dfrac{l}{t} = \dfrac{l}{\sqrt{\dfrac{2h}{g}}} = \dfrac{100}{\sqrt{\dfrac{250}{10}}} = 20\ m/s \end{cases}$$