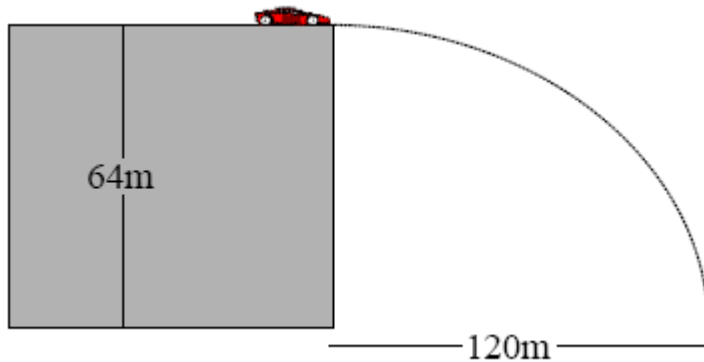


1. A car drives off a 64.0m high cliff and lands 120.0m away from the cliff. As part of the police investigation, determine the car's speed as it drove off the cliff. Assume air resistance is negligible throughout the problem and it is known that the car was doing a **FREE FALL** after it left the cliff.



2. Colonel Quaritch's spaceship is cruising in a horizontal line at a constant speed of 20 m/s to attack Pandora, as shown in the graph below. A Navi is 100 meters below on the ground and locates 300 meters away from the ship. He shoot an arrow up at 60° from the horizontal direction. (a) How fast should the arrow's initial speed be to reach the spaceship. (b) what is the velocity of the arrow when it hits the spaceship?

Note: we assume the arrow is falling under the influence of the gravity on Pandora with the same g as that on earth.

