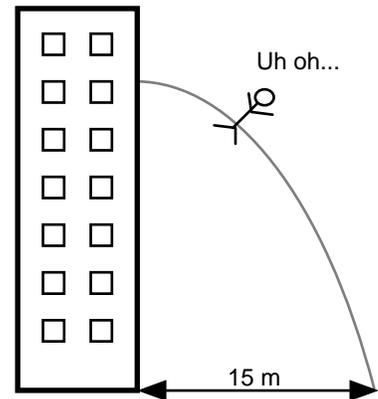


Vo is Horizontal

1.

In a movie Borris Badenough is pushed horizontally out of a window. He exits the window horizontally at 5.0 m/s . Borris lands 15 m from the edge of the building.

- What is the Borris Badenough's initial horizontal velocity?
 - What is the Borris Badenough's initial vertical velocity?
 - How fast, vertically, is the Borris traveling when it hits the ground?
 - How long was Borris in the air?
 - How high was the window Borris fell from?
- g. What VELOCITY did he impact the ground? (magnitude AND direction).



2. A penny is kicked horizontally off the roof of a 10 story building (33.3 m high). It is kicked at 22 m/s .

- What is the penny's initial horizontal velocity?
- What is the penny's initial vertical velocity?
- How long is the penny in the air?
- How far away from the building did the penny land?
- e. How fast, vertically, is the ball traveling when it hits the ground?
- f. How fast, horizontally, is the penny traveling when it hits the ground?
- g. What is the penny's VELOCITY (magnitude and direction) when it hits the ground?

3. A ball is rolled horizontally out a second story window (7 m high) with a velocity of 10.0 m/s .

- What is the ball's initial horizontal velocity?
- What is the ball's initial vertical velocity?
- How long is the ball in the air?
- How far away from the building did the ball land?
- e. How fast, horizontally, is the ball traveling when it hits the ground?
- f. How fast, vertically, is the ball traveling when it hits the ground?
- g. What is the ball's VELOCITY (magnitude and direction) when it hits the ground?

4. The Wile E. Coyote was chasing the Road Runner when he ran horizontally off a cliff at 46 m/s . Wile E. Coyote is falling for 12 seconds before hitting the ground.

- How high is the cliff?
- How far from the edge of the cliff did the coyote travel before hitting the ground?
- c. What was the coyote's impact velocity, (MAGNITUDE and DIRECTION)?

5. The Charlottesville parking garage on Market Street is 6.0 stories high, 19.8 m. A car travels horizontally off the top of the garage at 2.2 m/s, (5 mph.)
- a How far from the edge of the building did the car land?
 - b How long was the car in the air?
 - c What velocity did the car impact the ground? (magnitude AND direction)
6. A student is at a quarry and attempting to run off the edge of a cliff. They run off the cliff at horizontally at 10 m/s. The edge of the cliff is 5 m above the water.
- a How far from the edge of the building did the student land?
 - b How long was the student in the air?
 - c What velocity did the student impact the ground? (magnitude AND direction)

Answers 1. 5m/s, 0 m/s, 29.4 m/s, 3 s, 44.1 m, 29.8 m/s @ 80.3°; 2. 22 m/s, 9 m/s, 2.61 s, 57.4 m, 25.6 m/s, 22 m/, 33.7 m/s @ 49.3°; 3. 10 m/s, 0 m/s, 1.2 s, 11.95 m, 10 m/s, 11.8 m/s, 15.44 m/s @ 49.7°; 4. 705.6 m, 552 m, 126.3 m/s @ 69.9°; 5. 4.4 m, 2.01 s, 19.8 m/s @ 83.7°; 6. 10.1 m, 1.01 s; 14.1 m/s @ 35°