A skier leaves the ramp of a ski jump with a velocity of 10.0 m/s, 15.0° above the horizontal. The slope is inclined at 50.0°, and air resistance is negligible. You'd like to know where, on the incline, the skier lands. Follow the directions below to learn how to use Python to accomplish this.
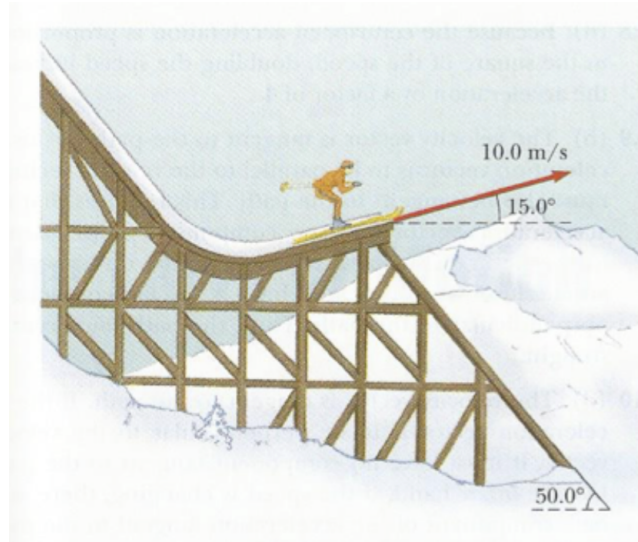

Figure 0.1

1. Using Python, generate an array of <u>times</u> (at 0.05 s intervals), position components, and velocity components of the skier (that's five seperate arrays). Use the point where the skier leaves the ramp as the origin of your coordinate system. Hint: To generate an array of times, I suggest that you use `numpy`'s `arange` command.

2. Using Python, generate arrays of the position components for the inclined slope (the 50.0° one). Don't forget that your origin is at the top of this incline.

3. Using Python, plot the skier's trajectory and the sloped-incline on the same graph.

4. Estimate the landing location of the skier by looking at the graph.

5. By inspecting elements of the arrays that you have built, can you determine a more exact value for the position of the skier at impact?

Note: the landing location that you should find is(before rounding): $\vec{r} = 27.7943\hat{i} - 32.124\hat{j}$ m.