# Written Assignment 3 (10 pts)

### **Assignment Level Student Learning Objectives:**

In this assignment, students will:

- Summarize the problem with a visual drawing and verbal description.
- Assess the problem by listing the data that you are given as well as listing the data that you
  will need to find.
- Analyze the problem with identification of problem type and listing relevant equations.
- Use mathematical techniques to solve the problem.

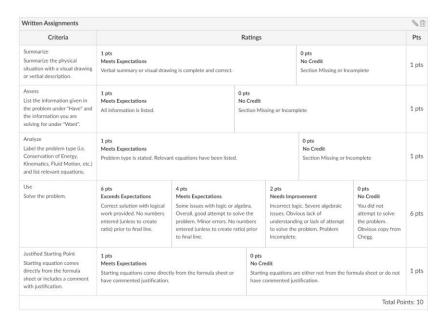
# **Assignment Purpose:**

The purpose of this assignment is to demonstrate the problem-solving skills that you have learned up until this point of the course. In addition, this assignment will allow you to display your current knowledge of understanding physical situations as well as the relationship between real life physical situations and fundamental physics concepts discussed in the course.

#### Instructions:

Attached you will find a problem statement as well as a pre-formatted document, for your convenience. All **algebraic manipulations must be completed <u>before</u> introducing any numeric quantities**. Note: The creation of ratios for solving systems of equations is permissible.

#### **Rubric:**



# (UMKC PHYS 210 SP 2025)

You come across an article discussing the power of volcanic eruptions to launch debris into the air. Curious, you decide to calculate how far away you will find debris from the eruption site. You focus on Mount St. Helens, which has an elevation of approximately 2,550 (above sea level) but rises 1,400 above the surrounding terrain. Assuming the rock that travels the farthest is launched at an angle of 65° relative to the horizontal at a speed of 143 m/s, what is the furthest distance you will be able to locate debris?

Sten	1:	Sum	marize	(1	nt)
OLUB		Juli	11141120	٠.	$\boldsymbol{\nu}$

A. Draw a diagram of the rocks motion:

B. Provide a brief verbal description of the problem.

Step 2: Assess the problem statement(1 pt)	
Given Information	Solving For
Step 3: Analyze the problem (1 pt)	

Problem Type: \_\_\_\_\_

**Relevant Equations:** 

**Step 4: Solve the Problem.** 

Solve problem and provide written explanation of each step that is not simple algebraic manipulation (6 pts)

Justify the starting equation (1 pt)

Solve: