Loop the Loop Lab

**Question:**

How does the strength of the tension force on a bucket when at the top of a vertical loop compare to the strength of the tension force when at the bottom of the loop?

**Purpose:**

To determine the relative strength of the tension force on a bucket when it is at the top and at the bottom of the vertical loop through which it moves.

A complete lab write-up includes a Title, a Purpose, a Data section, a Conclusion, and Discussion of Results. The Data section should include an organized and informative record of your observations and calculations for the two locations. The Conclusion should answer the initial question. Discussion should discuss and answer the question raised in the Purpose of the lab, include labeled free body diagrams for the two locations to assist in your description of the results, and describe any limitations or alterations of the lab that you feel are important to note.

|  |  |  |
| --- | --- | --- |
|  | Scoring Rubric | Total: |
| \_\_\_/2 | Labeled and organized all parts of the lab report. | \_\_\_\_\_\_/10 |
| \_\_\_/3 | Data section includes a table completed; units are indicated; sample calculations provided. |
| \_\_\_/2 | Conclusion answers the *question* posed in the Purpose. |
| \_\_\_/3 | The discussion uses supporting evidence for the conclusion. The discussion clearly describes how the tension forces vary between the top and bottom of the loop and include labeled Free-body diagrams that include numerical values to support the discussion. |