INSTRUCTIONS:
1) Connect the Force Sensor to Channel 1 of the Lab Pro interface. Be sure the sensor is set at 10N.
2) Construct a lab set up similar to the one that was demonstrated in class.
3) Adjust the force sensor so that it is at the angle your group was assigned.
4) Adjust the sensor clamp so that jar hanging from the string resting on the pulley is completely vertical.
5) Zero the force sensor and then make any other measurements of the apparatus you feel are necessary.
6) Use the computer display to determine the force applied to the sensor. Force Measured ______
7) Draw a complete force diagram for your system below

8) Show all calculations required to determine the mass of the jar

9) When done, bring your jar (jar, lid and contents) to the front desk for massing.

\[ \%error = \left( \frac{\text{theoretical} - \text{actual}}{\text{theoretical}} \right) \times 100\% \]

Actual Mass ______
Percent Error: _____
Grading: 15 points for diagrams, graphs and work (see rubric below)
10 points for accuracy:
10 points for 0-1% difference  5 points for 10-11% difference
9 points for 2-3% difference  4 points for 12-13% difference
8 points for 4-5% difference  3 points for 14-15% difference
7 points for 6-7% difference  2 points for 16-17% difference
6 points for 8-9% difference  1 point for 18-19% difference

Rubric for work:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Recorded Force value is within acceptable range</td>
<td>No or missing</td>
<td>Small errors made</td>
<td>correct</td>
<td></td>
</tr>
<tr>
<td>✓ Force Diagram correctly represents the experiment</td>
<td>No or missing key elements</td>
<td>Small mistake made</td>
<td>Excellent representation of the experiment</td>
<td>x2</td>
</tr>
<tr>
<td>✓ Correct mathematical model is used based on given data &amp; force diagram</td>
<td>No or missing</td>
<td>Small mistake made</td>
<td>correct</td>
<td>x1.5</td>
</tr>
<tr>
<td>✓ Work is logical and easy to follow</td>
<td>No or missing</td>
<td>Hard to follow</td>
<td>Easy to follow</td>
<td>x2</td>
</tr>
<tr>
<td>✓ Solution is determined using correct method</td>
<td>No or missing</td>
<td>Small mistakes made or group got stuck</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

**Total: / 15**