Procedures for Grader

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Basic Procedure

I will be assigning two or three problems per period. The format of the solutions will be as shown on the next page. You will grade these problems thoroughly. **The maximum score on each problem will be 10 points.**

Grading Guidelines

I expect you to grade one problem as thoroughly as possible within the limited time you have. This means that I do not expect you to find every mistake the student makes – it is their responsibility to check their work against the posted solution – but I do expect you to do more than just check their final answer. You can check for some basic or common errors. I provide some guidance below.

1. Before grading any problems, work the problems on your own, and then verify your solution with mine. This will speed up the grading process. Feel free to ask me questions about the assignment. Please alert me to any errors that you think may exist in the solution.
2. Grade only one problem at a time; look at the other problems, one at a time, later. Again, this will speed the grading process.
3. Do not grade any assignment that is not legible. Do not waste your time wading through problems that are difficult to read. Return them to me ungraded.
4. Below are some rough guidelines as to how to deduct points from the graded problem. Above all, use your best judgment.

**Basic Format (Format of assignments is given on the other side of this page)**

<table>
<thead>
<tr>
<th>Basic Format</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>No assumptions?</td>
<td>-1 point</td>
</tr>
<tr>
<td>No schematic (where necessary)?</td>
<td>-2 points</td>
</tr>
<tr>
<td>No units</td>
<td>-2 points</td>
</tr>
<tr>
<td>Inappropriate sig figs?</td>
<td>-1 point</td>
</tr>
<tr>
<td>Wrong sign in final answer?</td>
<td>-1 point</td>
</tr>
</tbody>
</table>

**Analysis**

Typical things to look for are as follows. These are ranged roughly from more severe to less severe, and deductions might range from 0 to 3 points.

- Correct answer, even though the analysis or calculations are wrong: **Assign a grade of zero for the entire homework assignment.**
- Inappropriate governing equation, incorrect assumptions, inappropriate free-body diagram or control volume
- Fundamental mathematical errors (integration/differentiation, fractions, etc.)
- Incorrect unit analysis (pay particular attention to “pound-mass” and “slug” system unit conversions)
- Simpler mathematical errors: Examples:
  - failure to convert degrees to radians in trig calculations
  - failure to convert RPM to radians/sec
  - incorrect interpolation
  - reading tables wrong (common error: reading the column heading “$v \times 10^3$” as meaning “multiply the value of $v$ by $10^3$.” It should be interpreted as “$v$ has been multiplied by $10^3$, so I must multiply the value by $10^{-3}$ to get the original value.”
  - Calculation errors (typos)
Sample Homework

Problem 2-6

Given: Object of known mass sliding down incline

Find: Distance traveled along ramp

Schematic & Given Data:
- \( m = 2.0 \, \text{kg} \)
- \( g = 9.81 \, \text{m/s}^2 \)
- \( z = 9.31 \, \text{m} \)
- \( v_i = 0 \)
- \( v_f = 7 \, \text{m/s} \)

Consider commenting on the result:
- Describe the answer in words (e.g., “Thus the object will slide about 5 m down the incline”)
- Does the number make sense physically?
- Is the answer consistent with theory?
- Is the result as expected?
- What about the sign of the answer?

Draw picture whenever possible. Draw free-body diagram when necessary.

General description or problem statement

List all relevant assumptions.

Describe analysis steps. Always include units!

Include units in answer! Include only up to 4 significant digits!