1. [3 pts] Which of the following is NOT a fundamental quantity that can be measured directly?
   A. length  B. speed  C. time  D. mass  E. none of these

2. [3 pts] Which of the following conditions could make it impossible to use classical physics?
   A. speeds that are too fast  B. speeds that are too slow  C. lengths that are too large  D. both A. & C  E. both B & C

3. [3 pts] In science, a “theory” is best described as
   A. an initial proposal of an explanation  B. a single piece of information, not related to other pieces of information  C. a large-scale, broadly applicable explanation  D. pure speculation that is only a guess at a possible explanation  E. More than one of these answers are correct.

4. [5 pts] The speed of sound is measured to be 337 m/s ("meters per second") on a certain day. What is this speed in miles per hour?

\[
337 \text{ m/s} \left( \frac{3600 \text{ s}}{1 \text{ hr}} \right) \left( \frac{1 \text{ ft}}{3.048 \text{ m}} \right) \left( \frac{1 \text{ mile}}{5280 \text{ ft}} \right) = 753.8475 \ldots \text{ miles/hr} = 754 \text{ miles/hr}
\]

5. [6 pts] You drive your car up a constant slope for 4.00 miles. In the process, you gain 1320 feet of vertical elevation. What is the angle of this slope?

\[
\sin \theta = \frac{1320 \text{ ft}}{21120 \text{ ft}} \Rightarrow \theta = \sqrt[3]{3.58^\circ}
\]