

Physics 10154 - Exam #1b

Please clearly indicate all of your answers with a box, and **SHOW ALL WORK**. You will not get full credit for any answer if I cannot tell how you arrived at that answer.

1. Human fingernails grow at an average rate of about 0.10 millimeters per day. At this rate, if a single fingernail were allowed to continue growing for an average human lifetime (75 years), how many feet long would the nail be?

2. A hot-air balloon measures 25 feet in diameter.
- What is the volume of the balloon in cubic meters?
 - What is the volume of the balloon in liters?

The volume of a sphere formula will be written on the board.

3. Point P is located at the coordinates $(x = 6.0, y = 7.5)$. Express the location of point P in polar coordinates.

4. For the right triangle below, find the unknown angle A and the unknown side x.

