

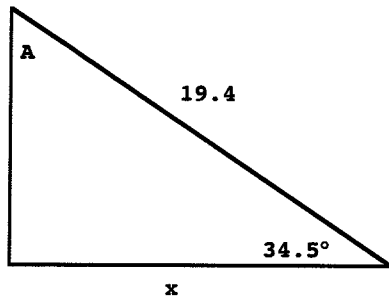
Physics 10154 - Exam #1a

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 hair grows at a rate of about 3.3 millimeters per day. At this rate, if a single hair were allowed to continue growing for an average human lifetime (75 years), how many feet long would the hair be?

2. A rectangular toy chest measures 3.0 feet long x 2.0 feet wide x 2.0 feet deep. Assuming it is water-tight, how many gallons of water could this chest hold?

3. Solve for the unknown leg x and the unknown angle A in this right triangle.



4. In polar coordinates, point P is at a distance of 3.4 meters from the origin at an angle of 67° above the $+x$ axis. Express the location of point P in cartesian coordinates.