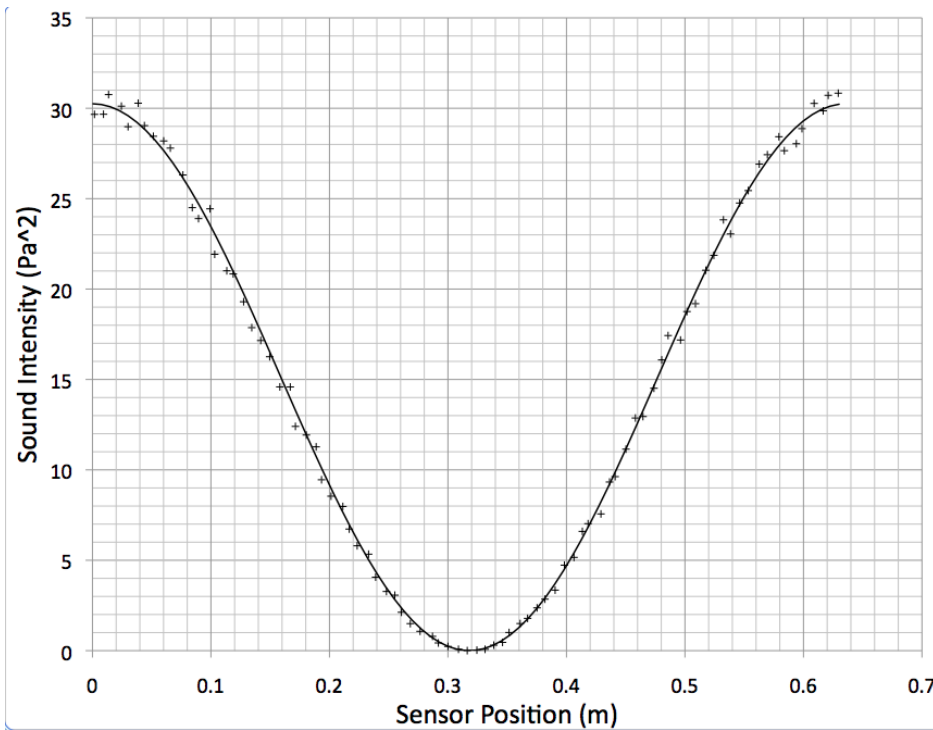


FREE-FORM IN TWO UNRELATED PARTS (12 points total)

Clearly show your reasoning and work as some part marks may be awarded. Write your final answers in the boxes provided.

PART A [Version of the question with typo in L removed, and scale on graph fixed.]

In Practicals you set up standing sound waves in a tube filled with air. The frequency of the sound was set to 270 Hz. It was a “closed-closed” tube, which you measure to have a length of $L = 0.636 \text{ m} \pm 0.004 \text{ m}$. You used a sound sensor which displayed the square of the pressure amplitude, called “Sound Intensity”, versus sensor position. Estimate the m -number for the mode of the standing wave, the wavelength of the sound, and the error in this wavelength. [Please write your answers in the boxes provided. m should be displayed to 1 significant figure. Display the wavelength, λ , as *value* \pm *error*, with the error displayed to 1 significant figure.]



$m =$

$\lambda =$ \pm