

**FOR 274 Assignment 2: Unit Conversions and Combining Errors [20 points]**

This assignment should be completed and handed in at the start of the next lab.

1. Using Books or the Internet find the following conversion factors for these common measures [5 points]

<b>English Measure</b>	<b>Conversion Factor</b>	<b>Metric Measure</b>
<b>(0.5pt each)</b>		
1 inch =		centimeters
1 foot =		meters
1 yard =		meters
1 mile =		kilometers
US pints =		litres
1 pound =		kilograms
1 ounce =		grams
1 acre =		hectares
1 sq mile		sq kilometers
<b>English:</b>		<b>English:</b>
<b>(0.5 pts each)</b>		
1 chain =		feet
1 foot =		hands
1 rod (or pole) =		feet
1 furlong =		poles
1 mile =		furlongs
1 league =		miles
<b>2.5 pts:</b>		
Tons per acre =		kilograms per hectare
Fahrenheit =		Celsius

**More Questions on Next Page:**

2. Use the information on the Combining Errors Handout to answer the following questions:[10 points]

a. The measure of tree biomass of a particular tree was made up of 3 main components:

- The biomass in the foliage =  $380 \pm 10$  kg
- The biomass of the stem =  $2100 \pm 20$  kg
- The biomass of the roots =  $1600 \pm 60$  kg

Calculate the total tree biomass and the total error.

b. Calculate the total area of a rectangular stand if the width was determined by pacing ( $400 \pm 40$  feet) and the breadth was determined by analysis of an aerial photograph ( $200 \pm 10$  feet)

**More Questions on Next Page:**

3. Describe, with the aid of a diagram, how without using instruments you might determine the height of a tree from its shadow length [5 points]: