MATH-2205-A-ICA-5

Solve all the following problems.

1. Show that $f(x) = \frac{1}{\sigma\sqrt{2\pi}}e^{-\frac{(x-\mu)^2}{2\sigma^2}}$; $-\infty < x < \infty$ is a probability distribution function, where the notations indicate the usual meanings.

2. There are three groups of people have average earnings **$150, $170 & $140** respectively. If the first two groups contain **17 & 12** people respectively and the combined average of earnings is **$153.25**, find the number of people in the last group.

3. If the mode of a certain frequency table is **65.5** and the lower limit of the modal class is **60.5** with the class size **10**, find the frequency of the modal class. Here frequency difference of the modal class and pre-modal class is **7** and frequency of post-modal class is **14**.

4. If the standard deviation of a frequency table is **3.6** and coefficient of standard deviation is **6.55%**, find the arithmetic mean of that table.