Similarities between t-tests and the ANOVA

- t-tests tell us whether or not two samples have the same mean.
- ANOVA tells us whether two or more samples have the same mean.
- As the t-test produced the t-statistic, the ANOVA gives us an F-statistic or F-ratio which compares the amount of systematic variance with the amount of unsystematic variance.

- ANOVA can tell us that there is a difference between means – so for three samples it tells us that $\overline{X}_1 = \overline{X}_2 = \overline{X}_3$ is not true.

- But it doesn't tell us where the difference is.

- It doesn't tell us whether $\overline{X}_1$ differs from both $\overline{X}_2$ and $\overline{X}_3$ or whether $\overline{X}_2$ differs from $\overline{X}_3$ but not $\overline{X}_2$ etc.