Statistics and probability

Probability is the study of chance and is very fundamental subject that we apply everyday while statistics is more concerned with how we handle data using different analysis techniques and collection methods

Statistics

Mean - is the average of the given numbers and is calculated by dividing the sum of given numbers by the total number of numbers.

$$\bar{x} = \frac{\text{Sum of the terms}}{\text{number of terms}}$$

Example

i) Calculate the mean in the given set

2; 5; 8; 16; 20; 27; 32

$$\bar{x} = \frac{2+5+8+16+20+27+32}{7}$$

$$= \frac{110}{7}$$

$$= 82,57$$

Mode - It is the most frequently occuring value.

Example

2; 5; 8; 6; 2; 2

Re-arrange the set in ascending order first

2; 2; 2; 5; 6; 8

∴ the mode is 2.

Median

Is a middle number in a set of data

~~NB: If the set~~

NB: If the numbers of terms in a set is even then the set have two medians, the two medians are added together divide by 2 ~~and~~ in order to get the actual median of the set

Example 1

4; 5; 7; 1; 6; 13; 15

First thing you re-arrange the set in ascending order

1; 4; 5; (6); 7; 13; 15

The median of the set is 6.

Example 2

1; 4; (5); (6); 7; 13

$\frac{5+6}{2} = \frac{11}{2} = 5,5$ ⇝ actual median.

Range - Is the difference between the greatest and least values in a set of data.

1; 4; 5; 6; 13; 15

Range = 15 - 1

= 14