Summary

- In this module we have solved many exercises on
    - Finding the regression lines, from regression lines
    - Estimating the future value
    - Obtaining means and coefficient of correlation etc.

- Given the mean, standard deviation or variance and correlation coefficient we can obtain regression coefficient using the data $b_{xy} = \frac{r.\sigma_x}{\sigma_y}$ or $b_{yx} = \frac{r.\sigma_y}{\sigma_x}$ and can obtain the required regression line.

- Given the bivariate data, we can identify the independent and dependent variable and we can obtain regression either by method of fitting a straight line or by finding the regression coefficient using the relation $b_{yx} = \frac{n\Sigma xy - \Sigma x\Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$ or $b_{xy} = \frac{n\Sigma xy - \Sigma x\Sigma y}{n\Sigma y^2 - (\Sigma y)^2}$ and can obtain the required regression equations.

- When we have given two regression coefficients, we can obtain the coefficient of correlation using the property that the correlation coefficient =±geometric mean of two regression coefficients.

- Given two regression lines, we can find means by solving the two simultaneous equations and the answers of the unknowns x and y gives the respective means and the coefficient of correlation is obtained by identifying the regression equations on X on Y and Y on X, and hence obtaining the regression coefficient and finding the geometric mean

- If when we consider arbitrarily the given equations as X on Y and Y on X and we get r greater than 1 then, interchange the equations. i.e., the equation X on Y should be considered as Y on X and the equation Y on X should be considered as X on Y.