Problem 1:

ii. Pearson's coefficient of correlation, (r) =0.975. There is a strong positive linear relationship between variables.

Problem 2:

Density of population=$\frac{Population\ (\prime 000)}{Area(in\ sq\ Km)}$

Death rate=$\frac{No\ of\ Death}{Population\ (\prime 000)}$

Pearson's coefficient of correlation, (r) =0.987. There is a strong positive linear relationship between variables.

Problem 3:

iii. Pearson's coefficient of correlation, (r) =0.927. There is a strong positive linear relationship between variables.

iv. Coefficient of determination (R^2) =r^2 =0.85.

85% of variation in One-hour production (Y) can be explained by the variation in number of assemblers (X).

That means, the fitted model has a good fit to the data and capable of explaining almost all variation in the dependent variable Y.

Problem 4:

Pearson's coefficient of correlation, (r) =-0.37

Coefficient of determination (R^2) =r^2 = 0.1369

Problem 5:

No. of police force = Independent (X)

No. of crime reported = Dependent (Y)

Pearson's coefficient of correlation, (r) =-0.228

Coefficient of determination (R^2) =r^2 = 0.052

Problem 6:

Apartment Sales = Independent (X)

Appliance Sales = Dependent (Y)

ii. Pearson's coefficient of correlation, (r) =0.979

iii. $\hat{y}$= 1.15+1.72x or $\hat{y}$= 1.16+1.71x

iv. Coefficient of determination (R^2) =r^2 = 0.958

Problem 7:

ii. $\hat{y}$= 4.09+0.119x

iii. Coefficient of determination (R^2) =r^2 = 0.346

Pearson's coefficient of correlation, (r) =0.589

Problem 8:

Number of client contacts by the field officers = Dependent (Y)

Amount of loan reimbursement by the clients = Independent (X)

ii. $\hat{y}$= 6.91+0.43x

iii. For x=40; 24.25, for x=75; 39.43

Problem 9:

Pearson's coefficient of correlation, (r) =0.75

Weekly sales = Dependent (Y)

Test scores = Independent (X)

ii. $\hat{y}$= 5+0.75x

iii. For x=65; 53.75

Problem 10:

Pearson's coefficient of correlation, (r) =0.98

ii. $\hat{y}$= -80.23+6.49x

iii. For x=50; 244.27

Problem 11:

Pearson's coefficient of correlation, (r) =-0.908

ii. $\hat{y}$= 952.7-6.24x

iii. For x=50; 640.7

Problem 12:

Job = Dependent (Y)

Points = Independent (X)

ii. $\hat{y}$= 3.31+0.134x

iii. For x=20; 5.99