**EXERCISE 2**  (simple linear regression)

At the outset the level of glycose and the age of 8 patients in an endocrinological clinic are given.

| **Age** | **Level of glycose** |
| --- | --- |
| 77 | 120 |
| 22 | 85 |
| 29 | 88 |
| 44 | 96 |
| 64 | 116 |
| 80 | 124 |

1. Using “age” as the independent variable and “level of glycose” as the dependent variable, make a scatter plot of the data.
2. Find the correlation coefficient. Is it significant?
3. Calculate the least squares (best–fit) line. Put the equation in the form of: *ŷ* = *a* + *bx*
4. Explain the parameter estimated values of the coefficients of the model.
5. Is the model successful? Which criteria do you use for your answer?
6. Predict the level of glycose for ages 40 and 60.
7. Calculate a 95% confidence interval for the parameters of the model
8. Calculate a 95% confidence interval for the expected level of glycose for age 40.
9. Calculate a 95% prediction interval for the level of glycose for age 40.