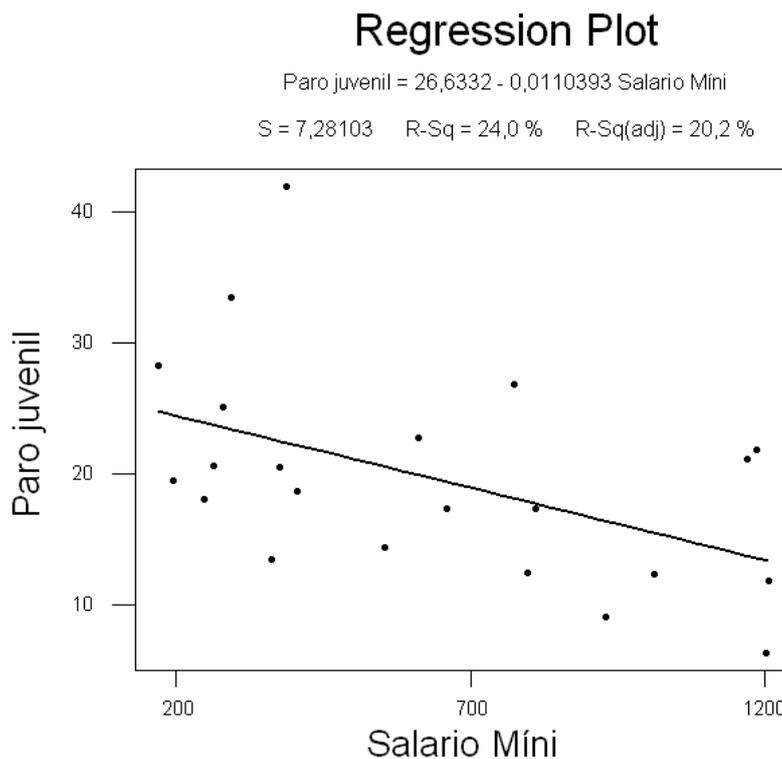




Statistics

Exercises 7

- The average, unofficial monthly income (in euros) received by a member of parliament in a certain country is:
$$Y = 1000 + 8000 X,$$
where X is equal to the number of builders that the politician meets every month.
 - Given that this is a linear equation, what is the statistical name given to the value 1000 and what is the name given to the value 8000.
 - How do you interpret the coefficients (1000 and 8000) of this regression equation?
 - If one politician meets 10 builders in a month, what would his unofficial monthly income be?
- The following diagram (Socialdemocracia.org) is a regression of the percentage of juvenile unemployment against minimum wage for 18 EU countries.



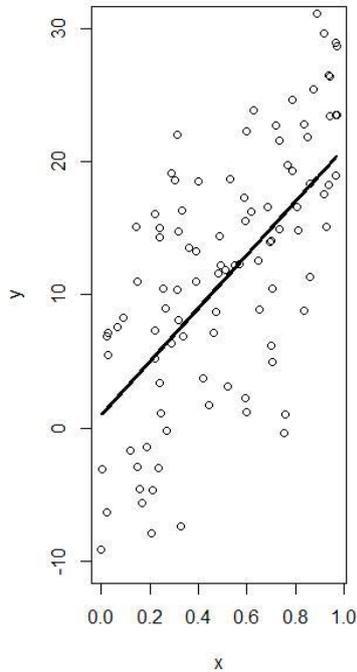
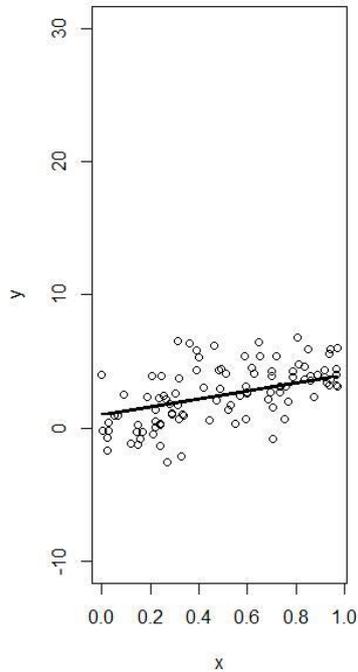
If the minimum wage in another EU country is €1000 per month, the predicted proportion of juvenile unemployment is approximately:

- 37,67%
- 37,67%
- 15,59%
- 15.59%

3. In a sample of the communities of two countries, I and E, the proportions of public employees who got their jobs via string pulling (x) and the levels of public deficit (y) were recorded. The regression lines are given below.

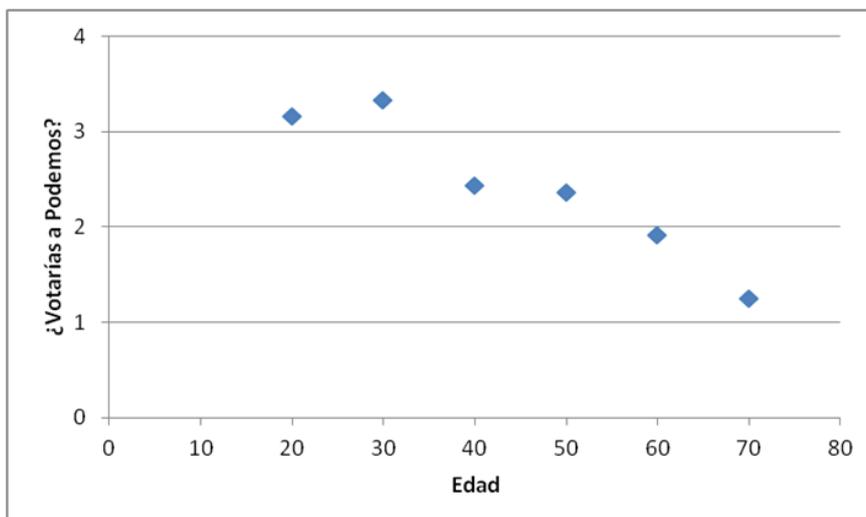
(I)

(E)



Which one of the following responses is correct?

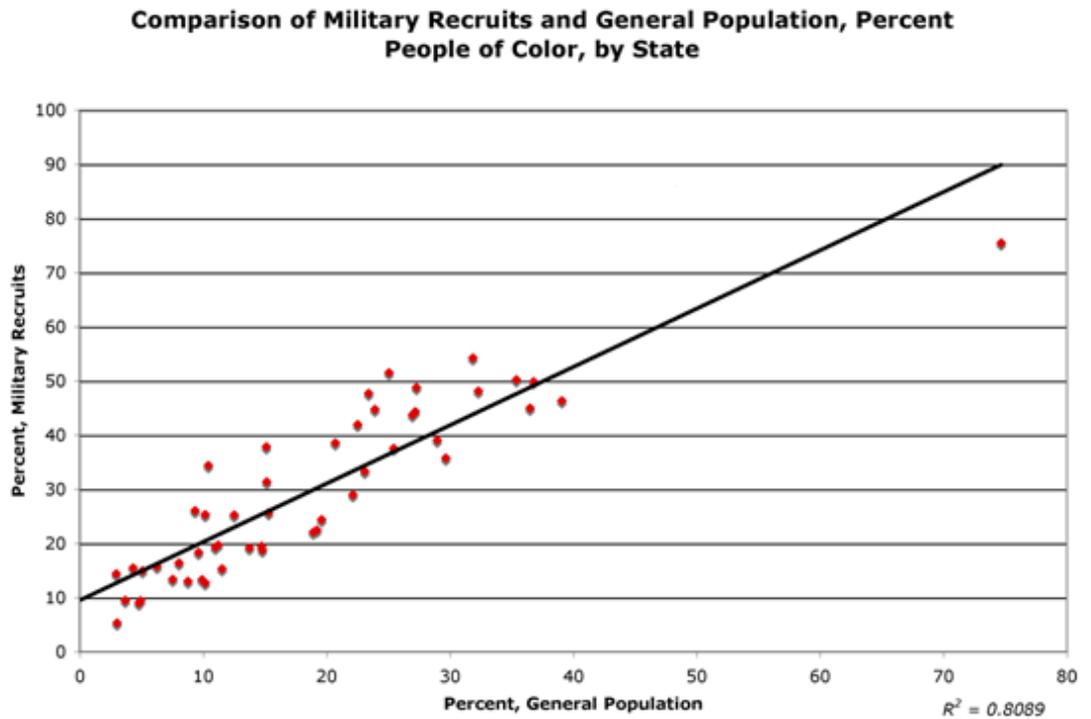
- a) In I, the correlation between x and y is higher and the slope of the regression line is higher.
 - b) In I, the correlation is higher and the slope is lower.
 - c) In I, the correlation is lower and the slope is lower.
 - d) In I, the correlation is lower and the slope is higher.
4. The following graph shows the mean replies to a question in the same CIS barometer about the grade of confidence or propensity to vote for Podemos (between 0 and 10) according to the age (Edad) of the respondents.



In this case:

- a) The correlation between age and propensity to vote Podemos is 0.
- b) The correlation is 1.
- c) The correlation is negative.
- d) None of the above.

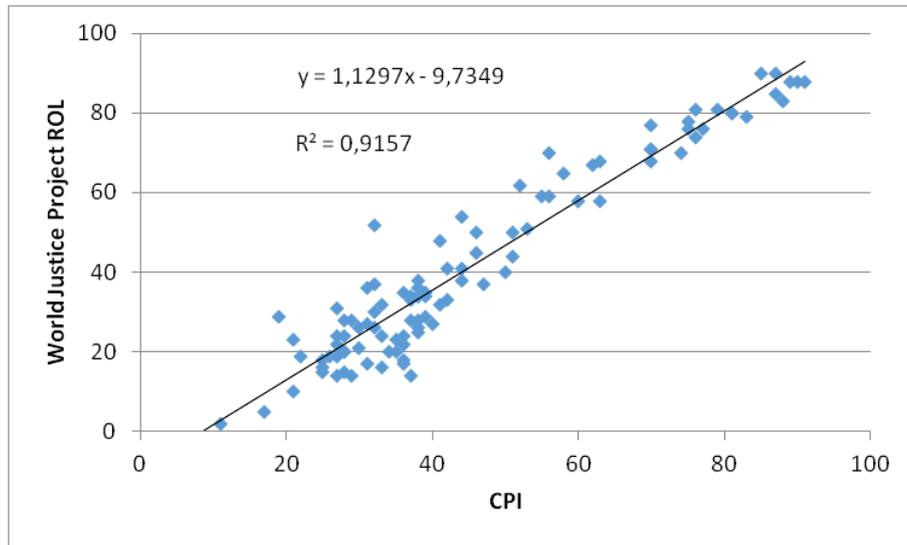
5. A US newspaper is carrying out a study on racism in the US army. They have calculated the following scatterplot shows the percentages of coloured military recruits (y) against the general population size (x) for various US states.



Which of the following regression lines is correct?

- a) $y = 1.08x$
- b) $y = 9.55 - 1.08x$
- c) $y = 9.55 + 1.08x$
- d) $y = -9.55 - 1.08x$

6. The following graphic shows the value of the World Justice Index (World Justice Project ROL) against the corruption perception index (CPI) for various countries in 2015.



In this case:

- a) The correlation between the two indices is 0.9157 and the slope of the regression line is -9.7349.
- b) The correlation between the two indices is 0.9157 and the slope of the regression line is 1.1297.
- c) The correlation between the two indices is 0.9569 and the slope of the regression line is -9.7349.
- d) The correlation between the two indices is 0.9569 and the slope of the regression line is 1.1297.