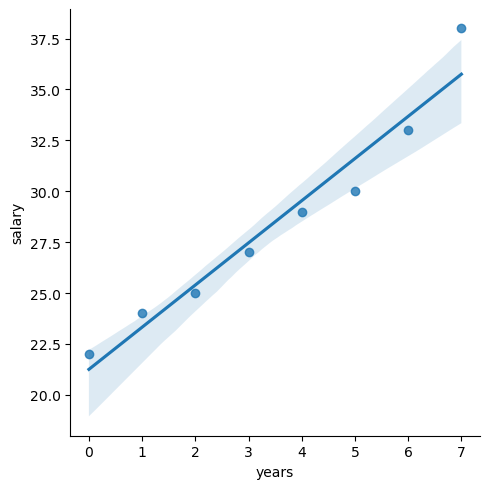
# Correlation and Regression Practice

1. For each of the following, would you expect a positive, negative, or zero correlation:
   1. the height of an individual and the number of children that he has 0
   2. the price of a house and its' size 1
   3. The height of an individual and his shoe size 1
   4. the relationship between Esav and Yaakov -1
   5. the age of an individual and his blood pressure 1
   6. how happy one is and how sad one is -1
   7. the number of children in a family and the family's wealth -1
   8. A company's advertising expenditure and its sales revenue 1
2. Draw a scatter diagram using sns.lmplot(), and compute the coefficient of correlation using .corr(). Is salary related to the number of years of schooling?

|  |  |
| --- | --- |
| Number of Years of Schooling beyond High School (x) | Salary (in thousands of dollars) (y) |
| 2 | 25 |
| 3 | 27 |
| 5 | 30 |
| 1 | 24 |
| 0 | 22 |
| 7 | 38 |
| 6 | 33 |
| 4 | 29 |



*Correlation:*

*years salary*

*years 1.000000 0.973908*

*salary 0.973908 1.000000*

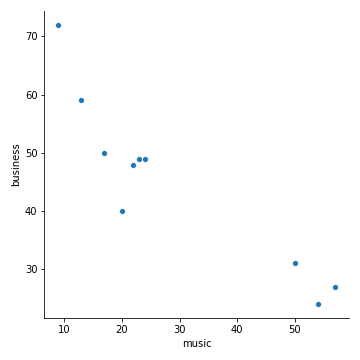
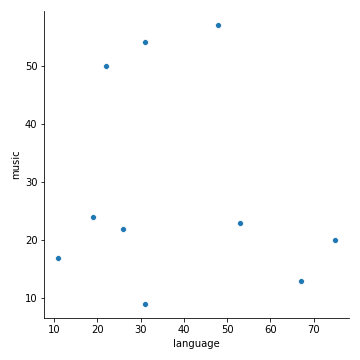
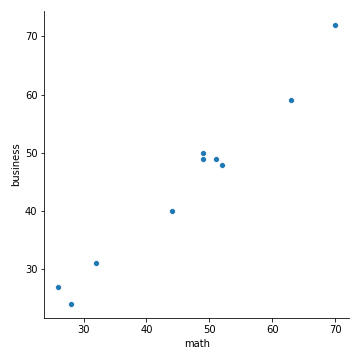
3. A correlation coefficient of -0.97 :

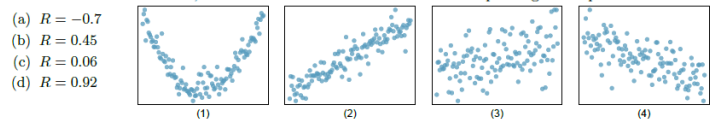
* 1. indicates a strong negative correlation
  2. indicates a weak negative correlation.
  3. is insignificant
  4. is impossible

4. The regression equation could be represented by which of the following graphs?

a. b. c.

5. The regression equation could represent which of the following scatter diagrams:

a.b.c.

6.

b d c a