

Regression Review Exercises

1. Here is some data:

$$\begin{array}{c|cc}
x & y \\
\hline
0 & 1 \\
1 & 3 \\
2 & 2
\end{array}$$

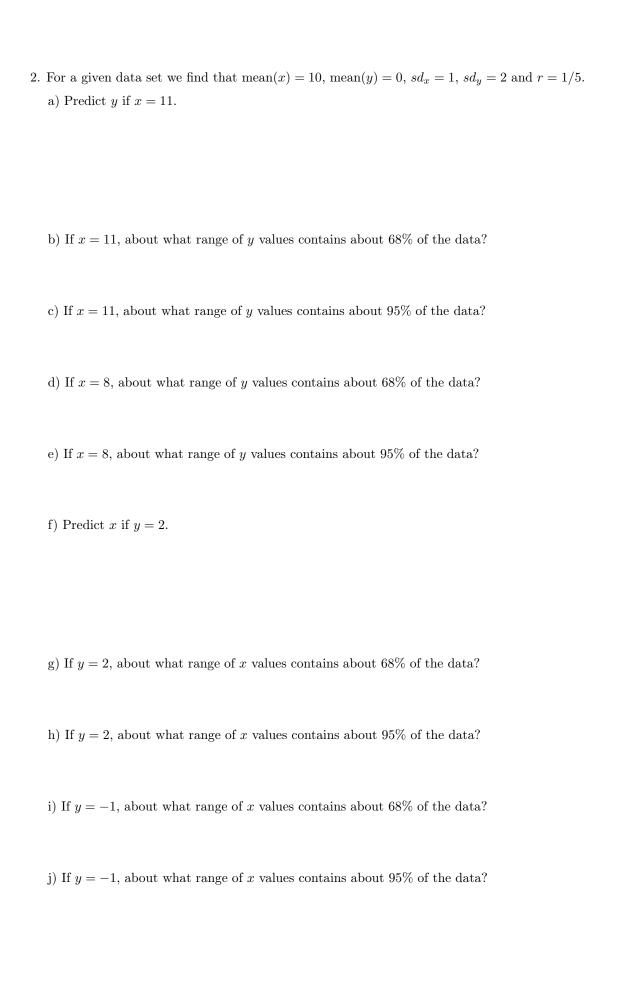
a) Sketch the data and the line y = x + 1 then calculate the RMS error for the line

b) Sketch the data and the line $y = \frac{3}{2} x + 1$ then calculate the RMS error for the line

c) Sketch the data and the line $y=\frac{2}{3}\,x+1$ then calculate the RMS error for the line

d) For the given data, $sd_x = sd_y = \sqrt{2/3}$ and r = 1/2. Calculate the sd line and find its RMS error.

e) Calculate the regression line and find its RMS error.



| 3. Calculate the given area under the standard normal curve. |
|---|
| a) to the left of $z = 1.5$ |
| b) to the right of $z=2.5$ |
| c) between -1.5 and 2.5 |
| |
| 4. For what value of z is each statement true? |
| a) area to the left of z is 35% |
| b) area to the right of z is 10% |
| c) area between z and $-z$ is 10% |
| 5. Suppose a measurement has a normal distribution with mean = 10 and sd = 4. Calculate the percent of measurements that satisfy the following. |
| a) at most 16 |
| b) at least 0 |
| c) between 4 and 20 |
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