5.A farmer collected the following data, which show crop yields for various amounts of fertilizer

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fertilizer(pound/100sq.ft) | 0 | 4 | 8 | 10 | 15 | 18 | 20 | 25 |
| Yield(bushels) | 6 | 7 | 10 | 13 | 17 | 18 | 22 | 23 |

By the given data we have

(a).calculate the least-squares regression line for these data.

Let x be the amount of fertilizer per 100sq.ft

Let y be the yield

The least-squares regression line is given by the equation

=

=0.7282

Therefore

==5.1478

So that the regression line is =0.7282+5.1478

(b).Plot the point and the least-squares regression line on the same graph.

