

Quiz: Regression Analysis

The table shows the amount of medicine for treating a disease in the bloodstream over the 9 hours following a dose of 12 mg. It seems that the rate of decrease of the drug is approximately proportional to the amount remaining.

Time (hrs)	0	1	2	3	4	5	6	7	8
Drug amount(mg)	12	10.2	9.6	8.0	7.0	6.4	5.7	4.8	3.4

- 1 Use this information to find a suitable function to model this data.
- 2 Using your model, when will there be less than 1 mg. of the medicine in the patient's bloodstream?
- 3 If the initial dose was 15 mg., when would the amount of the medicine in the bloodstream fall below 5 mg?

A factory is producing and stockpiling metal sheets to be shipped to an automobile manufacturing plant. The factory ships only when there is a minimum of 3254 sheets in stock at the beginning of that day. The table shows the day,  $x$ , and the number of sheets in stock,  $f(x)$ , at the beginning of that day.

Day	1	2	3	4	5	6
Sheets in stock	854	985	1054	1195	1204	1384

- 4 Write a linear regression equation for this set of data, rounding coefficients to four decimal places
- 5 Use this equation to determine the day the sheets will be shipped.

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A factory is producing and stockpiling metal sheets to be shipped to an automobile manufacturing plant. The factory ships only when there is a minimum of 1842 sheets in stock at the beginning of that day. The table shows the day,  $x$ , and the number of sheets in stock,  $f(x)$ , at the beginning of that day.

Day	1	2	3	4	5	6
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- 9 Write a linear regression equation for this set of data, rounding coefficients to four decimal places
- 10 Use this equation to determine the day the sheets will be shipped.

Circle # Correct	0	1	2	3	4	5	6	7	8	9	10
Percentage Score	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%