Premedical Course: Handling Medical Data

Introductory Questions

1.

Figure 4. Survival time as a function of total dose of drug given to each of 12 mice
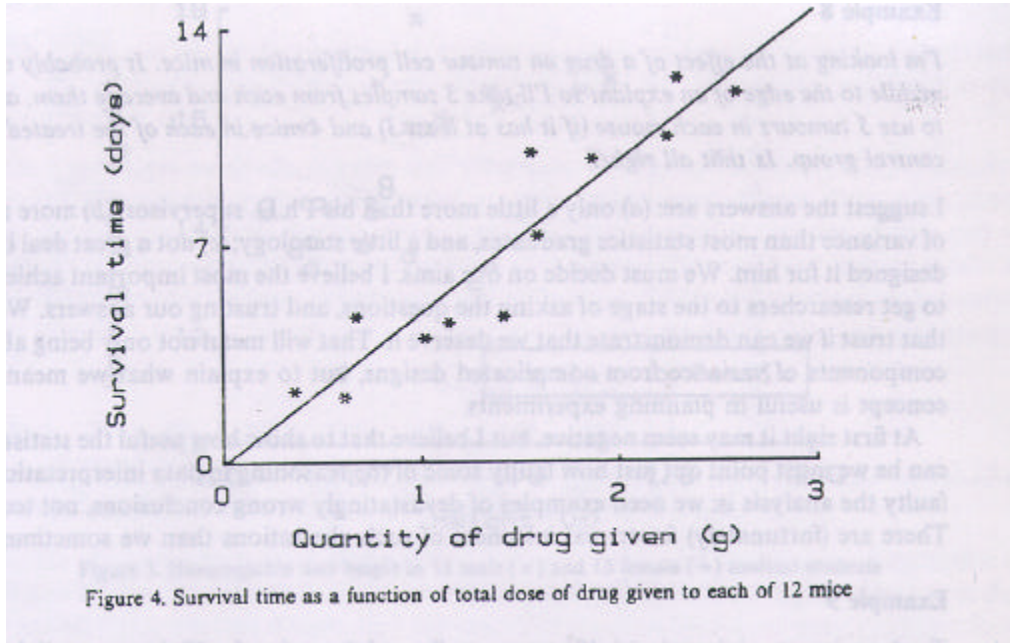
The above graph appeared in a paper accompanied by the following assertion:

> *"Twelve mice were injected with 10^7 tumour cells, and thereafter for 28 days or until death were given daily doses of 1 mg/g body weight of a drug which was thought to prolong life. Length of life was plotted against total dose administered, as shown above. The strong relationship is a reflection of the great efficacy of the drug"*

Do you agree? Give your reasons.

2.
In a group of 100 men who had myocardial infarctions (heart attacks) and were subsequently questioned about their life styles, the reported alcohol intake was considerably less than in a group of age-matched controls who had not had myocardial infarctions. This provides evidence that some alcohol intake is protective against heart attacks.

Does it? Again give your reasons.

3.
A screening method for cervical cancer fails to identify 5% of cases, and falsely identifies as positive 1% of those who do not have the disease. If an individual is assessed as positive, what is the probability that she has the disease?