

Assignment #7

- 1) Many of the survival times are unknown since the first accident had not happened yet. If one were to look only at the survival times that were known, one would have a biased view of the survival time distribution. (2 marks)

- 2) The population of all possible distances of 25 points is extremely large (the population size is $25! = 25 \times 24 \times 23 \times \dots \times 1$). The random sample is a tiny proportion of the population. This is okay for estimating a mean, but not for estimating a minimum. Therefore, using our common sense (move to the nearest neighbour) is a more efficient way. Random samples of reasonable size do represent the population adequately for most purposes, but they cannot give accurate estimates of the extremes of the population distribution, such as a minimum. If we imagine that a random sample of paths through the given locations and their associated circuit lengths, it is the minimum circuit length we would like to find. We are very unlikely to come close by choosing a moderate sized sample of paths and their associated circuit lengths. On the other hand, using a common sense approach like "nearest neighbour" is bound to give a fairly small circuit length even if not the very minimum one." (3 marks; 1 for the 1st part and 2 for the 2nd part)

- 3) The suggestion from the lecture notes of using a control chart for school marks is practical. If you plot the mark at the date of submission of the assignment or test, you will note any particular high or low marks. The timing of mark in relation to your activities is an important factor. By reducing the unsuccessful behaviour, you may increase your average mark and reduce the variability of your mark. (Answer may vary) (3 marks)

- 4)
 - a) p.255, 3rd paragraph, line 1
 - b) p.253, line 7
 - c) p.255, 4th paragraph, line 3
 - d) p.255, 2nd paragraph, line 2
 - e) p.257, 3rd paragraph, line 3
 - f) p.259, 2nd paragraph, line 2
 - g) p.252, 1st paragraph, line 4
 - h) p.251, 4th paragraph, line 10 (4 marks)

- 5) Minimum insurance premium = $0.2 * \$50,000 = \$10,000$
The premium will probably be higher than this amount since the insurance company has to "load" the premium in order to cover their costs and make a profit. (3 marks; 2 for the calculation and 1 for stating out that the premium will probably higher than \$10,000)