大葉大學九十三學年度碩士班甄試試題紙					
所　別	組別	考試科目（中文名稱）	考試日期	考試時間	備註
休閒事業管理	甲	統計學	**12** 月 **8** 日	09:00~10:30	不可程式之一般計算機

註：備註欄若未註明可攜帶計算機或其他輔助工具作答時，考生一律不准攜帶。

共五題，每題二十分

1. Suppose that the probability of engine malfunction during any 1-hour period is p=0.02. Find the probability that a given engine will survive 2 hour.

2. The number of accidents at a particular playground is found to average three per month. During the last month six accidents occurred. Would you regard this number as unusually large (highly improbable if μ were still equal to 3) and indicative of an increase in the mean μ?

3. The service times for customers coming through a checkout counter in a retail store are independent random variables with a mean of 1.5 minutes and a variance of 1.0. Approximate the probability that 100 customers can be serviced in less than 2 hours of total service time

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4. Let $f(y_1 y_2) = 4 y_1 y_2,\ 0 \leq y_1 \leq 1$
   $= 0,$ elsewhere
   show that Y_1 and Y_2 are independent.

5. Use the method of least squares to fit a straight line to the n = 5 data points given in Table A

Table A　Data set

x	y
-2	0
-1	0
0	1
1	1
2	3

- $p(0 \leq z) = 0.3413$ when $z=1.0$
  $=0.4332$ when $z=1.5$
  $=0.4772$ when $z=2.0$
  $=0.4938$ when $z=2.5$
  $=0.4987$ when $z=3.0$