ECON1005 2103-2014 Graded Assignment 1

This assignment is to be prepared as a WORD document. It covers subject matter in Units 3, 4 and 5. This assignment has an allocation of 10 marks. see marking guidelines below.

Note that your assignment should be entitled: Your First Name  
Your Last Name ECON1005 Assignment #1. For example: Mary McDonaldECON1005  
Assignment #1

QUESTION 1 [6 marks]

The number of items sold per month at Company ABC was recorded and inputted into  
MINITAB for analysis. The following exhibits (Exhibits 1 and 2) were subsequently  
generated.

Exhibit 1

Stem-and-Leaf Display: Sales

Stem-and-leaf of Sales N = ?

Leaf Unit = 10

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 001 |
| 4 | 2 | 3 |
| 5 | 2 | 4 |
| 5 | 2 |  |
| 7 | 2 | 99 |
| 7 | 3 |  |
| 8 | 3 | 2 |
| 5) | 3 | 44555 |
| 11 | 3 | 67 |
| 9 | 3 | 89 |
| 7 | 4 | 0111 |
| 3 | 4 | 33 |
| 1 | 4 | 5 |

[All relevant working must be shown.]

continue overleaf.../

Exhibit 2

Descriptive Statistics: Sales

Variable N N\* Mean TrMean StDev Minimum Q1

Sales ? 0 343.3 344.9 76.2 202.0 292.3

Variable Median Q3 Maximum

Sales ?? 408.3 ???

1. Determine the missing values of "?"," ??" and "???" from the information in  
   Exhibits 1 and 2. [3 marks]
2. Is the distribution of the number of items sold symmetric? Give reasons for your  
   answer. [3 marks]

QUESTION 2 [44 marks]

(a) A researcher is interested in investigating the age distribution (18-24, 25-34, 35-44,  
45-54, 55-64, 65+) of adult online social network users (for example: Facebook, Twitter,  
LinkedIn, Pinterest, MySpace etc). He surveyed 100 randomly selected adult online  
social network users to gather data on their age. The data gathered was summarized in the  
table below.

|  |  |
| --- | --- |
| Age Interval | Frequency |
| 18 - 24 | 18 |
| 25 - 34 | 26 |
| 35 - 44 | 27 |
| 45 - 54 | 20 |
| 55 - 64 | 7 |
| 65+ | 2 |
| TOTAL | 100 |

(i) For each of the following charts, state whether it could be suitable to represent the age  
distribution of social network users summarized in the table above: a bar chart,  
histogram, stem-and-leaf diagram, box-and-whisker diagram? Give reason for your  
answer. [8 marks]

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* 1. Estimate the mean age of the sample. [All relevant working must be shown.]

[3 marks]

* 1. Estimate the standard deviation of the age of the sample. [All relevant working  
     must be shown.] [3 marks]
  2. Determine the median age of the participants in the sample. Interpret your  
     answer. [All relevant working must be shown.] [4 marks]
  3. Calculate the Inter-quartile range for the age distribution of the sample. Interpret  
     you answer. [All relevant working must be shown.] [5 marks]

(b) The researcher gathered data from 50 males and 50 females. To further investigate  
how the adults use social network, the participants were asked whether or not they use  
Facebook. Fourteen males and 42 females indicated that they use Facebook.

(i) If a person is randomly selected from the sample, what is the probability that, the  
person uses Facebook? [2 marks]

(ii) If a person is randomly selected from the sample, what is the probability that, the  
person is Male and does not use Facebook? [2 marks]

* + 1. If a person is randomly selected from the sample, what is the probability that, the  
       person is Male or does not use Facebook? [3 marks]
    2. If two (2) persons are randomly selected from the sample, what is the probability

that they both use Facebook? [Hint: persons are selected one after the other, without replacement]

[[4 marks]

* + 1. What is the probability that a Male from the sample does not use Facebook?

[3 marks]

* + 1. What is the probability that a Facebook users from the sample is male? [3 marks]
    2. Are the events, "Male" and "does not use Facebook' independent? [Support  
       your answer.] [2 marks]
    3. Are the events, "Male" and "does not use Facebook' mutually exclusive?  
       Support your answer. [2 marks]

Total 50 marks [Graded out of 10]

Rubric ECON1005 – Graded Assignment #1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria |  |  |  |  | Score |
| Interpretation  of Questions | The learner  has  demonstrated  a very good  understanding  of what the  questions are  asking and  requires of  them. | The learner  has  demonstrated  a good  understanding  of what the  questions are  asking and  requires of  them. | The learner  has  demonstrated  a fair  understanding  of what the  questions are  asking and  requires of  them. | The learner  has little or  no  understanding  of what the  questions are  asking and  requires of  them. | 20 |
| Clarity of  argument | Excellent  expression  and argument  in terms of  explaining  their answers  and/or giving  reasons for  their answers. | Good  articulation  and argument  in terms of  explaining  their answers  and/or giving  reasons for  their answers. | Fair  articulation  and argument  in terms of  explaining  their answers  and/or giving  reasons for  their answers. | Argument is  unclear. | 5 |
| Technical  correctness of  answer | The learner  has  demonstrated  a  comprehensive  grasp of the  concepts and  explicitly  provides all  relevant  technical  working with  accuracy. | The learner  has generally  grasped the  concepts but  challenged by  technical  writing skills. | The learner  has  demonstrated  a desire to  pursue the  assignment  but has  exhibited  some areas of  ignorance in  presenting  their  calculations. | The learning  has  absolutely no  knowledge  and the  answers  reflect the  learner’s  ignorance of  the concepts. | 25 |