

1. Please use gemechupaulos003@gmail.com to send your assignment
2. Please respect the due date
3. Each of the assignments will be marked
4. Try to be available on our Zoom class on Tuesday, May 26, 2020 at 11:00 AM.

HiLCoE

School of Computer Science & Technology
Statistics & Probability (CC234)
Assignment II (for the online class)

5 Workout Problems

Instruction: Show all the necessary steps clearly on the separate answer sheet provided.

1. The following table refers to the ages (to the nearest years) of the sample of 60 known offenders who committed an auto theft in Addis Ababa City in 2011 (Ethiopian Calendar).

Mark of students (out of 25)	Number of students
11 - 14	4
15 - 18	6
19 - 22	11

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23 - 26	16
27 - 30	8
31 - 34	10
35 - 38	5

- i) Find the arithmetic mean and interpret your result..
- ii) Find the median and interpret your result.
- iii) Use Chebyshev's Theorem to determine the interval where at least 75% of the data is lying.

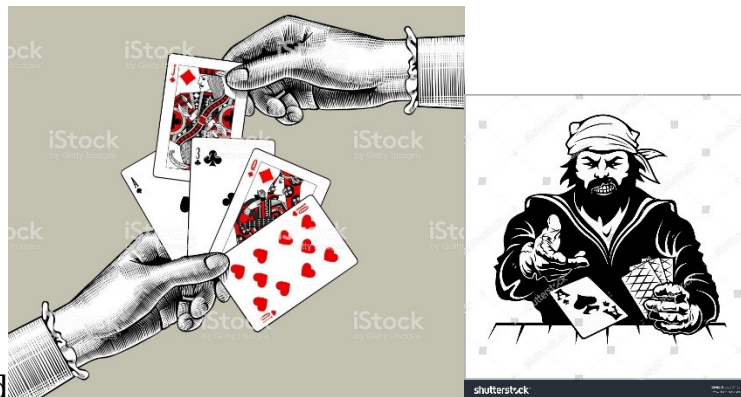
2. The following table refers to the weight (to the nearest kg) and average daily food consumption (in ***tens*** of calories) of five obese adolescent boys.

Food Consumption (in <i>tens</i> of calories per day)	Weight (in kg)			
32	84			
26	65			
29	75			
28	78			
27	72			

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- a) Find the equation of the estimated regression line (considering weight as a dependent variable)
- b) Identify the slope and the y-intercept and interpret your result.
- c) Find the correlation coefficient and interpret your result.
- d) Estimate the weight of an obese adolescent boy whose average daily consumption is 300 calories.
- e) Find the explained and an explained variation and interpret briefly your result for each case.

3. A card is drawn from a well shuffled ordinary deck of 52 cards. What is the probability that the card is :



- i) not a face card
- ii) the 9 of a diamond
- iii) a 9 or a black card

4. The 2011 average gross sales of all firms in a small town has a mean of birr 2.3 million and standard deviation of 0.6 million. Using

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Chebyshev's Theorem, find at least what average of firms in the town had a 2011 gross sales of

- i) 1.1 to 3.5 million birr
- ii) 0.8 to 3.8 million birr
- iii) 0.5 to 4.1 million birr

For the following question (question number 5), in each case:

- i) you have to show the graph of your distribution.**
- ii) you have to interpret your result to the accuracy of two decimal places.**

5. A biologist has studied a particular tropical insect and she has discovered that its life span is normally distributed. The mean lifespan of this insect is 72 days, and the standard deviation of its lifespan is eight days. Find the probability that a randomly selected tropical insect lives:
- a. fewer than 70 days
 - b. more than 76 days
 - c. between 68 and 78 days.