

SET 3: Pure Mathematics

Tutorial 3

1. In a survey of 20 smokers, the following data was obtained. Each value represents the number of cigarettes the smoker smokes each day.

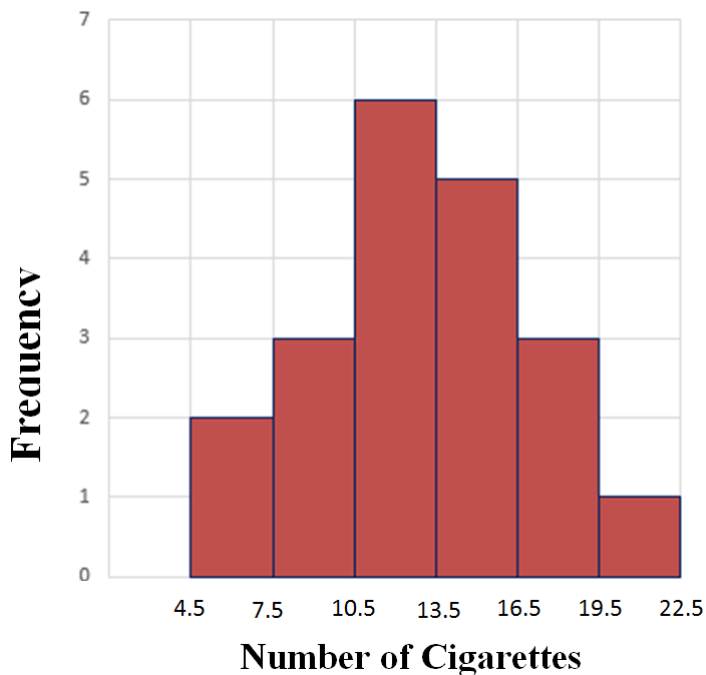
10	8	6	14
22	13	17	19
11	9	18	14
13	12	15	15
5	11	16	11

- (a) Construct a frequency distribution with six classes.
(b) Construct a histogram.
(c) Construct a frequency polygon.

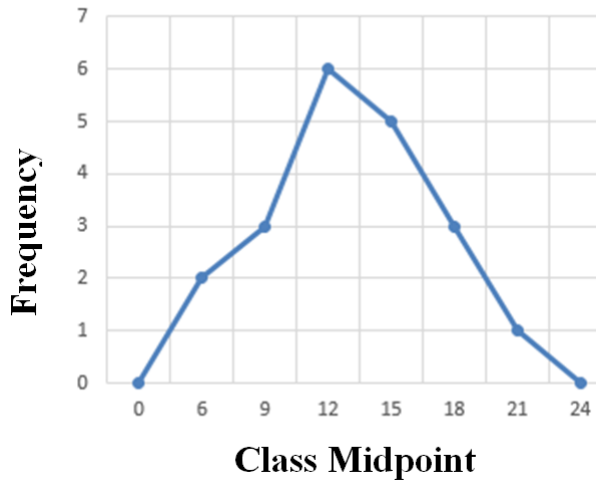
[Ans. a]

Class	Frequency
5 – 7	2
8 – 10	3
11 – 13	6
14 – 16	5
17 – 19	3
20 – 22	1
	20

[Ans. b]

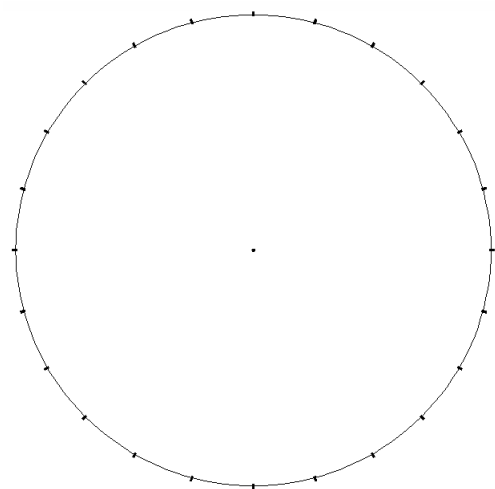


[Ans. c]

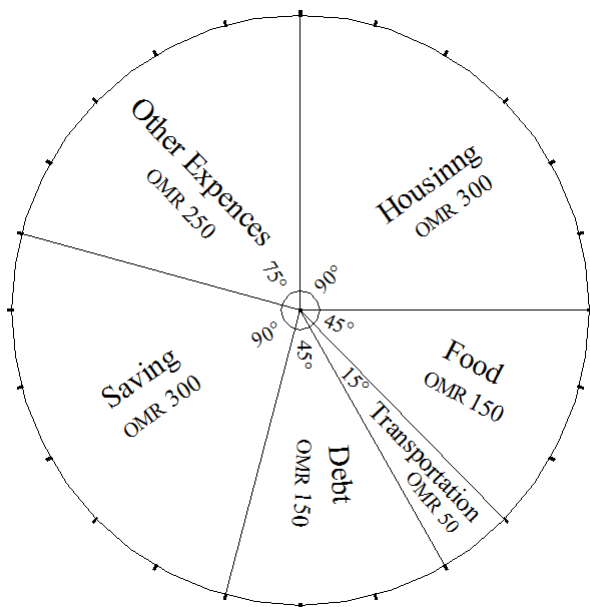


2. A man receives a monthly salary of OMR 1200. He spends the money as shown in the table below. Construct a pie graph to represent this data using the circle with equally-divided circumference below.

Item	Budget Allocation (OMR)
Housing	300
Food	150
Transportation	50
Debt	150
Savings	300
Other Living Expenses	250
	1200



[Ans.]

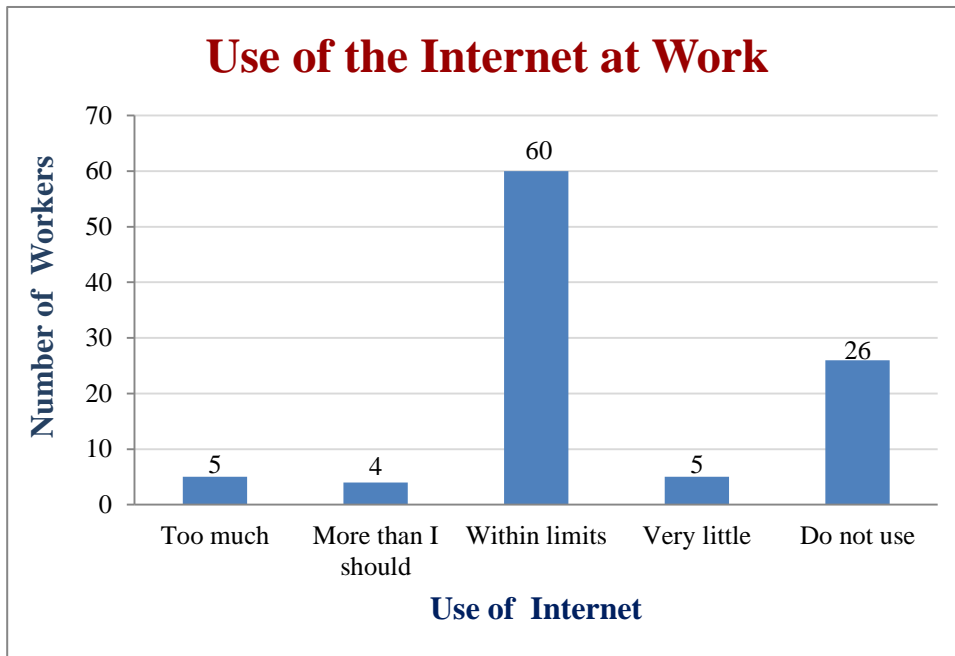


3. A survey was conducted on 100 workers who were asked about how much they use the Internet at work. The results were as follows:

Use of the Internet at Work	Number of Workers
Too much	5
More than I should	4
Within limits	60
Very little	5
Do not use	26

Construct a vertical bar graph for this data.

[Ans.]



4. Find the mean, median and mode of the following data sets:

- (a) 1, 3, 4, 2, 3, 5, 1 [Ans. Mean = 2.71, Median = 3, Mode = 1 and 3]
 (b) 6.5, 6.5, 9.5, 8.0, 14.0, 8.5, 3.0, 7.5, 16.5, 7.0, 8.0 [Ans. Mean = 8.64, Median = 8, Mode = 6.5 and 8.0]
 (c) 18, 23, 20, 35, 20, 23, 26, 23, 19, 20 [Ans. Mean= 22.7, Median = 21.5, Mode = 20 and 23]

5. A random sample of the life expectancy of people from 25 countries was selected, and the following frequency distribution was obtained. Find the mean. [Ans. 64 years]

Class	Frequency
43 – 47	2
48 – 52	2
53 – 57	3
58 – 62	3
63 – 67	4
68 – 72	6
73 – 77	3
78 – 82	2

6. Find the standard deviation from the mean of the following samples of scores:

(a) 10, 60, 50, 30, 40, 20 [Ans. 18.7]

(b) 35, 45, 30, 35, 40, 25 [Ans. 7.1]

7. Find the standard deviation from the mean for the distribution of the number of miles that 20 randomly selected runners can run during a given week. [Ans. 8.3]

Class	Frequency
6 – 10	1
11 – 15	2
16 – 20	3
21 – 25	5
26 – 30	4
31 – 35	3
36 – 40	2