**STATISTICS**

**Information sheet 1.1 Statistics Definition**

***Statistics*** is defined as art and science of *collection,* *presentation,* analysis & *interpretation* of quantitative data.

***Quantitative approach***-refer to mathematic tools or having a numeral data.

***Qualitative approach***: refer to experience opinion or historical data,

**Collection of data**- refer to gathering of numeral value or data.

**Types of collection of data**

1. Direct method – refers to interview method, (one on one approach)
2. Indirect Method – refers to questionnaire, a written document to be filled up by respondents.
3. Registration – enforced by Law.
4. Observation – behavioral approach.
5. Experimentation – refers to cause and effects.

**Presentation of Data**

-refers to arrangement of collected data.

Types of Presentation of Data.

1. Textual – using paragraph to describe the collected data.
2. Graphical presentation – using graph or picture to present data.

b.1 Line graph – comparison in terms of increased and decreased.

b.2 Bar chart – comparison of two data

b.3 Pie – chart presentation by percentage.

b.4 Picto graph – description by picture

c. Tabular presentation – refers to the use of tables having vertical columns and horizontal rows.

**Analysis of Data**

-refers to breaking down the data into detailed

**Interpretation of Data**

-refers to drawing of conclusion.

**Activity**

Based on the data presented below

Construct the following.

1. Line graph by course by grade level
2. line graph by course by gender
3. Bar chart by course by grade level
4. Bar chart by course by gender
5. Pie chart by course

Table 1

Number of Students enrolled in

TCSF

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course | Grade 11 | | Grade 12 | |
| Male | Female | Male | Female |
| ABM | 20 | 10 | 25 | 15 |
| HUMSS | 60 | 65 | 70 | 75 |
| EPAS | 15 | 20 | 18 | 17 |
| ICT | 20 | 21 | 24 | 25 |
| H.E | 50 | 45 | 50 | 55 |

A.

60

50

40

30

20

10

ABM HUMSS EPAS ICT HE

B.

60

50

40

30

20

10

ABM HUMSS EPAS ICT HE

C.

60

50

40

30

20

10

ABM HUMSS EPAS ICT HE

D.

60

50

40

30

20

10

ABM HUMSS EPAS ICT HE

**SELF CHECK**

Name :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to collection, presentation, and analysis of data.

a. Quantitative b. qualitative c. statisticsd. algorithm

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to process of obtaining data.

a. collection b. presentation c. analysis d. interpretation

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ process of arranging the data into required presentation.

a. collection b. presentationc. analysis d. interpretation

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to breaking down a data into details.

a. collection b. presentation c. analysisd. interpretation

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ process of drawing conclusion

a. collection b. presentation c. analysis d. interpretation

6. \_\_\_\_\_\_\_\_\_\_\_\_ refers to graphical presentation of the increasing and decreasing data.

a. line graph b. bar charts c. picto graph d. pie chart

7. \_\_\_\_\_\_\_\_\_\_\_ refers to graphical presentation considering the comparison of data.

a. line graph b. bar chartsc. picto graph d. pie chart

8. \_\_\_\_\_\_\_\_\_\_\_ refers to graphical presentation using pictures in presenting data.

a. line graph b. bar chartsc. picto graph d. pie chart

9. \_\_\_\_\_\_\_\_\_\_\_ refers to graphical presentation by presenting the data by percentage.

a. line graph b. bar chartsc. picto graph d. pie chart

10. \_\_\_\_\_\_\_\_\_\_\_\_ presentation of data using vertical columns and horizontal rows.

a. Tabular b. graphical c. Textual d all of the above

**Information sheet 2.1 Frequency Distribution Table.**

**Frequency Table** – is a tabular presentation of raw data, converted into graph data having class set and class interval.

**Class Set** – the design number of distances from highest number to lowest number.

**Class interval** – the distance between lower boundaries to higher boundaries.

**Frequency** – the total number of tally marks per class set.

**Less than cumulative frequency** – the accumulated number of frequencies starting from lowest number to highest number.

**Greater than cumulative frequency** – the accumulated frequency from highest to lowest number.

**Class Mark** – The number that represent the Class set, The Mid-point of the Class set, quantitatively defined as the average of the lower and upper boundaries.

Example: From the given raw data

Below construct a frequency Distribution table:

|  |  |  |
| --- | --- | --- |
| 15 | 23 | 32 |
| 28 | 37 | 44 |
| 32 | 41 | 56 |
| 47 | 59 | 74 |
| 51 | 62 | 85 |
| 69 | 77 | 92 |
| 72 | 81 | 18 |
| 85 | 97 | 22 |
| 98 | 12 | 35 |
| 18 | 28 | 47 |

**Steps:**

1. Determined the highest and the lowest number.

H = 98

L = 12

1. Compute for the Range

R = H – L

= 98 – 12

R = 86

3. Determined the desired class set.

(Class set should be ranging from 5-15, statistician is responsible to set the desired class set)

Class set = 7

4. Compute for the class interval (i)

i = Range

desired class set

i = 86

7

i = 12

12.25

5. Construct the Frequency table

1. Start with the Lowest number = 12
2. Add the (i) interval minus 1

12 + 12 = 24 - 1= 23

1. Next class set,the next number 24, add 12 minus 1
2. Repeat until the last class set
3. Tally the given raw data into class set.
4. Count the number of tally marks per class set and record to “f” frequency column.
5. Compute for the less than cumulative frequency by adding the previews frequency to the existing frequency per class set, until you reach the total number of data given.
6. Compute for the greater than frequency, starting with the total number of data (30), subtract the existing frequency per class set.
7. Compute for the class mark (x) by adding the lower & upper.

Boundaries:

12 + 24 = 36 = 18

2 2

**Illustration**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Set | Tally | Frequency | < cf | >cf | Class Mark |
| 12 – 23 | IIIII – I | 6 | 6 | 30 | 17.5 |
| 24 – 35 | IIIII – I | 6 | 12 | 24 | 29.5 |
| 36 – 47 | IIII | 4 | 16 | 18 | 41.5 |
| 48 – 59 | III | 3 | 19 | 14 | 53.5 |
| 60 – 71 | II | 2 | 21 | 11 | 65.5 |
| 72 – 83 | IIII | 4 | 25 | 9 | 77.5 |
| 84 – 95 | IIII | 4 | 29 | 5 | 89.5 |
| 96 – 107 | I | 1 | 30 | 1 | 101.5 |

**SELF CHECK**

Given: Prepare a frequency distribution table using desired class set = 5

|  |  |
| --- | --- |
| 129 | 140 |
| 140 | 156 |
| 151 | 169 |
| 176 | 173 |
| 182 | 181 |
| 190 | 190 |
| 135 | 152 |
| 129 | 155 |
| 130 | 165 |
| 150 | 187 |

1. Determine the range from the given data.

a. 79 b. 80 c. 61 d. 82

2. Identify the first class set on the frequency table.

a. 129 – 145 b. 129 – 144c. 129 – 143 d. 129 – 142

3, Determine the frequency of the class set 161 – 176.

a. 3 b. 4 c. 5 d 6

4. what is the class interval of the given data.

a. 10 b. 12 c. 14 d 16

5. Determine the class mark of the class set 177 – 192.

a. 183.5 b. 184.5 c. 185.5 d. 186.5

6. What is the summation of the frequency based on the frequency table.

a. 18 b. 19 c. 20 d. 21

7. What is the less than cumulative frequency of the class set 145 – 160.

a. 11 b. 12 c. 13 d. 14

8. What is the greater that cumulative frequency of the class set 161 – 176.

a. 12 b. 11 c. 10 d. 9

9. Determine the frequency of the class set 129 – 144.

a. 6 b. 7 c. 8 d. 9

10. Determine the greater than cumulative frequency of the class set 177 – 192.

a. 3 b. 4 c. 5 d. 6

**Information sheet 3.1 Measures of Central Position (Ungrouped Data)**

**Mean** – quantities defined as the sum of the given raw data divided by the number of data given. It is also known as the average.

**Median** – defined as the midpoint of the given raw data. It can be computed by arranging the data into assembling or descending order and determined the midpoint number. In the case there are two mid number, add the two and divide it by two.

**Mode** – known as the most frequent number appear in the series of data.

**Example**

From the given ungrouped data compute for mean, median, and mode.

Given:

15 18 10

12 17 42

21 24

30 25

Computation:

Mean: 15

10

21

30

42

18

17

24

25

207

Mean (x) = x

n

x = mean

x = total sum of given

n = number of given

x = 207

9

X = 23

Median: arrange the given by ascending order.

10

15

15

18

21 –median

24

25

30

42

Mode: 10

15

15 - mode =15

17

17

21

24

25

31

42

**Exercise**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 65 | 42 | 92 | | 88 | 48 | | 72 | | | 32 | | 14 | | 80 | |
| 53 | 72 | 48 | 93 | | 76 | 53 | | 88 | | | 15 | | 15 | | 82 | |
| 50 | 65 | 42 | | 92 | 88 | | 48 | | 72 | 12 | | 14 | | 80 | |  | |
| 53 | 77 | 48 | | 93 | 76 | | 53 | | 88 | 15 | | 15 | | 82 | |  | |

1. From the given calculate the mean median and mode. Ungroup data.

2. Prepare frequency table desired interval 5

SELF CHECK

**Name: Date:**

**Course: Score:**

1. 1. You received your final grade in the following subject:

English 82 Science 85

Math 79 MAPEH 76

Filipino 80 Social Studies 82

Compute for your average.

a. 84.66 b. 83.66 c. 81.66 d. 80.66

1. 2. From the given, determine. The Median:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 61 | 72 | 12 | 20 | 18 | 33 | 42 | 51 | 72 |

a. 46 b. 47 c. 48 d. 49

1. 3. Determined the Mode from the given sequence number.
2. 15, 12, 15, 18, 20
3. 16, 17, 17, 20, 21
4. 15, 15, 12, 12, 15

a. 12, 16, 12 b. 18, 16, 15 c. 15, 17, 15 d. 15, 20, 15

1. 4 – 6
2. From the given raw data compute for mean, median and mode.

85 85

88 92

92 84

76 85

20 25

4. Compute for mean.

a. 72.2 b. 73.2 c. 74.2 d. 75. 2

5. Compute for the median.

a. 85b. 86 c. 87 d. 88

6. Compute for the mode.

a. 85b. 86 c. 87 d. 88

1. 7 – 10
2. Comelec register the follow’s votes for presidential candidate in every region, compute the average vote per region.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **REGION** | | | | | |
| Candidacy | I | II | III | IV | V |
| Duterte | 506 | 805 | 881 | 783 | 521 |
| Roxas | 511 | 900 | 878 | 808 | 522 |
| Poe | 601 | 862 | 900 | 805 | 583 |
| Pangilinan | 514 | 785 | 505 | 402 | 542 |
| Pascual | 701 | 997 | 702 | 980 | 586 |

7. Compute for the average vote of Pascual.

a. 937.2 b. 793.2c. 379.2 d. 799.2

8. At what Region did Duterte wins in the election.

a. II b. IV c. II & IV d. None

9. Compute the range of the given data.

a. 942 b. 992 c. 492 d. 294

10. Compute the average vote of Poe.

a. 750.2 b. 507.2 c. 720.5 d. 502.7

**Information sheet 4.1 Measures of Central Position (Group Data)**

**Group Data** – arrange in sequential data as presented in frequency distribution table.

**Formula for group data**

**Mean** (x) = f x

N

x = mean

f x = total sum of the product of frequency and the mark

n = total number of the data given

**Median** **(md)**

Md = Lmd + N/2 – cf – 1 i

fmd

Where Lmd = lower limit where the median lies

N/2 = position of the median

cf -1 = cumulative frequency before the median lies.

fmd = frequency where the median lies.

i = the given class interval

**Mode (mo)**

= Lmd + ∆l i

∆l + ∆2

Where:

Lmd = lower limit where the mode lies

I = change is difference between the frequency before the mode and the frequency of the mode

2 = change in two, difference between the frequency of the mode and frequency after it.

i = class internal given

**Solved Problem**

Given the frequency table. Compute for mean, median, and mode.

***Mean***

|  |  |  |  |
| --- | --- | --- | --- |
| Class set | (f) frequency | Class Mark  X | F x |
| 25-29 | 3 | 27 | 81 |
| 30-34 | 7 | 32 | 224 |
| 35-39 | 4 | 37 | 148 |
| 40-44 | 6 | 42 | 252 |
| 45-49 | 5 | 47 | 235 |
| 50-54 | 5 | 52 | 260 |

f = 30

f x = product of the frequency and the class mark per class set

f x = 81 + 224 + 148 + 252 + 235 + 260

f x = 1200

Mean x = f x

N

= 1200

30

X = 40

***Median***

|  |  |  |  |
| --- | --- | --- | --- |
| Class set | F | >cf |  |
| 25 - 29 | 3 | 3 | Frequency of the median |
| 30 - 34 | 7 | 10 |  |
| 35 - 39 | 4 | 14 | Cumulative frequency |
| 40 - 44 | 6 | 20 | Median position |
| 45 - 49 | 5 | 25 |  |
| 50 -5 4 | 5 | 30 | Lower limit of the median |
| fx = | 30 |  |  |

1. Determined the position of the median.

N/2 = 30 = 15th

2

15th number where the median lies.

1. Determine the frequency of the median find = 6
2. Determine the cumulative frequency with the median lies.
3. Determine the lower limit of the median lies = 40
4. Determine the i (class interval)

25, 26, 27, 28, 29 (file) 5 number per class set.

f. Apply the formula:

Md = Lmd + N/2 –cf-1 i

fmd

md = 40 + 15 - 14 5

6

= 40 + 1 5

6

= 40 + 5

6

Md = 40.83

**Mode (mo)**

|  |  |  |
| --- | --- | --- |
| **Class set** | **F** |  |
| 25-29 | 3 | Frequency before it |
| 30-34 | 7 | Frequency of mo |
| 35-39 | 4 | Frequency after it |
| 40-44 | 6 | lower limit of mo |
| 45-49 | 5 |  |
| 50-54 | 5 |  |

fx = 30

1. Determine the frequency of the mode, the highest frequency = 7
2. Determine the frequency before it = 3
3. Determine the frequency after it = 4
4. Compute for (∆l)

∆l = frequency – frequency before

= 7-3

∆l = 4

1. Compute for ((∆2) change in two

∆2 = frequency – frequency after it

= 7-4 = 3

1. Apply the formula.

Mo = Lmo = + ∆l i

∆l +∆2

= 30 + 4 5

4 +3

= 30 + 4 5

7

= 30 + 20

7

Mo = 32.86

**SELF CHECK**

**Name Date**

**Course Score**

From the given frequency table compute for mean, median, and mode and answer the question provided for.

|  |  |
| --- | --- |
| Class set | Frequency |
| 15 - 17 | 2 |
| 18 - 20 | 1 |
| 21 - 23 | 3 |
| 24 - 26 | 8 |
| 27 - 29 | 4 |
| 30 - 32 | 2 |
| 33 - 35 | 6 |
| 36 - 38 | 4 |

1. What will be the mean of the given data.\

a. 27.83 b. 28.73 c. 29.73 d. 30.73

2. What will be the median of the given data.

a. 28.75 b. 27.75c. 26.75 d. 25.75

3. What will be the mode of the given data.

a. 23. 66 b. 24.66 c. 25.66d. 26.66

4. Determined the computed class interval ( i )

a. 2 b. 3c. 4 d. 5

5. Determined the value of f x in the class set 24 – 26.

a. 100 b. 150 c. **180 d. 200**

6. Determined the cumulative frequency of the class set 33 – 35.

a. 26 b. 27 c. 28 d. 27

7. Compute for the class mark of the class set 36 – 38.

a. 37 b. 38 c. 39 d. 40

8. What is the frequency of the median lies.

a. 5 b. 4c. 3 d. 2

9. Compute for the summation of f x.

a. 837 b. 836  **c. 835** d. 834

10. What is the value of change in one (1) for the computation of mode.

a. 5 b. 4 c. 3 d. 2

**Information sheet 5.1 Quantiles (ungrouped data)**

***Quantiles*** – refers to dividing a whole data into equal parts.

***Quartiles***– dividing the data into four (4) equal parts.

***Decile*** – dividing the data into ten (10) equal parts.

***Percentile***– dividing the data into 100 (hundred) equal parts.

**UNGROUPED DATA**

1. From the raw data, arrange the given into ***ascending*** order.
2. Compute the quartiles using the formula:

Q1 = N

4

Q2 = 2N

4

Q3 = 3N

4

Q4 = 4N

4

1. Follow the pattern of the formula to calculate the Decile:

D3 = 3N D7 = 7N

10 10

D5 = 5N D9 = 9N

10 10

4. Same pattern in computing the percentile.

P10 = 10N P70 = 70N

100 100

P25 = 25N P90 = 90N

100 100

P50 = 50N

100

**Example Problem:**

From the given; Compute for Quantile:

Quartile (Q1 Q2 Q3 Q4)

Decile (D3 D5 D7 D9)

Percentile (P10 P20 P30 P50)

Given:

|  |  |  |  |
| --- | --- | --- | --- |
| 12 | 26 | 18 | 20 |
| 20 | 30 | 20 | 25 |
| 18 | 18 | 22 | 36 |
| 15 | 22 | 18 | 18 |
| 25 | 15 | 12 | 20 |

Arrange the given into ascending order and numbered it.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | ***12*** | 6 | ***18*** | 11 | ***20*** | 16 | ***25*** |
| 2 | ***12*** | 7 | ***18*** | 12 | ***20*** | 17 | ***25*** |
| 3 | ***15*** | 8 | ***18*** | 13 | ***20*** | 18 | ***26*** |
| 4 | ***15*** | 9 | ***18*** | 14 | ***22*** | 19 | ***30*** |
| 5 | ***18*** | 10 | ***20*** | 15 | ***22*** | 20 | ***36*** |

1. Calculate for ***Quartiles.***

Q1 = N = 20 = 5

4 4

The 5th number = 18

Q2 = 2N = 2(20) = 40 = 10

4 4 4

The 10th number = 20

Q3 = 3N = 3(20) = 60 = 15

4 4 4

The 15th number = 22

Q4 = 4N = 4(20) = 80 = 20

4 4 4

The 20th number = 36

1. Calculate for ***Decile.***

D3 = 3N = 3(20) = 60 = 6

10 10 10

The 6th number = 18

D5 = 5N = 5(20) = 100 = 10

10 10 10

The 10th number = 20

D7 = 7N = 7(20) = 140 = 14

10 10 10

The 14th number = 22

D9 = 9N = 9(20) = 180 = 18

10 10 10

The 18th number = 26

1. Calculate for P***ercentile***.

P10 = 10(N) = 10(20) = 200 = 2

100 100 100

The 2nd number = 12

P20 = 20(20) = 400 = 4

100 100

The 4th number = 15

P30 = 30N = 30(20) = 600 = 6

100 100 100

The 6th number = 18

P50 = 50N = 50(20) = 1000 = 10

100 100 100

The 10th number = 20

**SELF CHECK**

GIVEN

|  |  |  |  |
| --- | --- | --- | --- |
| 85 | 19 | 69 | 28 |
| 92 | 25 | 71 | 35 |
| 28 | 38 | 85 | 42 |
| 32 | 42 | 93 | 43 |
| 16 | 53 | 22 | 90 |

1. Compute for Q2 .

**a. 42** b. 25 c. 32 d. 22

2. Compute for Q3.

a. 71 b. 85 c. 90 d. 92

3. Compute for D3.

a. 25 b. 26 c. 27 d. 28

4. Compute for D5.

a. 40 b. 41 c. 42d. 43

5. Compute for D7.

**a. 71** b. 72 c. 73 d. 74

6. Compute for D9.

a. 90 b.89 c. 88 d. 87

7. Compute for P15.

a. 21 b. 22 c. 25 d. 28

8. Compute for P40.

a. 34 b. 35c. 36 d. 37

9. Compute for P60.

a. 43 b. 42 c. 41 d.40

10. Compute for P90.

a. 90 b. 92 c. 94 d. 96

***Information sheet. 6.1 Quantiles (Group Data)***

1. Prepare frequency table showing the class set, frequency & less than calculative frequency.
2. Calculate for:

***Quartiles:***

Q1 = Lq1 + N/4-cf-1 i

fq1

where: Lq1 = Lower boundaries where Q1 lies.

N/4 = The position

Cf-1= Cumulative frequency where the Q1 lies

Fq1 = Frequency there Q1 lies

i = Class interval

Q2 = Lq2 + 2N/4 - cf-i i

fq2

Q3 = Lq3 + 3N/4 - cf-i i

Fq3

Q4 = Lq4 + 4N/4 - cf-i i

Fq4

1. Calculate for ***Decile*** using the pattern of the formula.

D1 = Ld1 + N/10 - cf-i i

fd1

D3 = Ld3 + 3N/10 - cf-i i

fd3

D7 = Ld7 + 7N/10 - cf-i i

fq7

D9 = Ld9 + 9N/10 - cf-i i

fq9

1. Calculate P***ercentile*** by using the pattern in the formula.

P10 = Lp10 + 10N/100 - cf-i i

Fq10

P50 = Lp50 + 50N/100 - cf-i i

fp50

***Example Problem***

From the given Frequency Table, Compute for

Quartiles (Q2 and Q3)

Decile ( D5, D7, D9 )

Percentile ( P50, P70)

GIVEN

|  |  |  |
| --- | --- | --- |
| ***Class Set*** | ***f*** | ***cf*** |
| 20-24 | 3 | 3 |
| 25-29 | 2 | 5 |
| 30-34 | 5 | 10 |
| 35-39 | 4 | 14 |
| 40-44 | 2 | 16 |

Q2  = 2N = 2(16) = 32 = 84 4 4

Q2 = Lq2 + 2N - cf-i

4 i

fq2

= 30 + 8 – 5 5

5

= 30 + 3 5

5

= 30 + 3

Q2 = 33

Q3 = 3N = 3(16) = 48 = 124 4 4

Q3 = Lq3 + 3N - cf-i

4 i

fq3

= 35 + 12 – 10 5

4

= 35 + 2 5

4

= 35 + 2.5

Q3 = 37.5

D5 = 5N = 5(16) = 80= 810 10 10

D5= 30+ 8-5 5

5

= 30 + 3 5

5

D5 = 33

D7 = 7(N) = 7(16) = 112 = 11.2 11 10 10 10

D7= 35 + 11-10 5

4

= 35 + 1 5

4

D7 = 36.25

D9 = 9N = 9(16) = 144 = 14.4 14 10 10 10

D9= 35 + 14-10 5

4

= 35 + 4 5

4

D9 = 40

P50 = 50N = 50(16) = 800 = 8 100 100 100

P50= 30 + 8-5 5

5

= 35 + 3 5

5

P50 = 38

P70 = 70(N) = 1120 = 11.2 11 100 100

P70= 35 + 11-10 5

4

= 35 + 1 5

4

= 35 + 5/4

P70 = 36.25

**SELF CHECK**

**GIVEN (Question 1 – 5)**

|  |  |
| --- | --- |
| Class set | Frequency |
| 18-20 | 3 |
| 21 – 23 | 4 |
| 24 – 26 | 7 |
| 27 – 29 | 3 |
| 30 – 32 | 2 |
| 33 – 35 | 1 |
| 36 – 38 | 5 |

1. Compute for the Q3.

a. 33 b. 34 c. 35 d. 36

2. Compute for the Q4.

a. 42 b. 41 c. 40 d. 39

3. Compute for D5.

a. 29.5 b. 28.5c. 27.5 d. 26.5

4. Compute for the P50.

a. 29.5 b. 28.5c. 27.5 d. 26.5

5. Compute for the P75.

a. 32 b. 33 c.34 d. 35

**GIVEN (Question 6 – 10)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Class Mark | 27 | 31 | 35 | 39 | 43 | 47 | 51 |
| Frequency | 5 | 4 | 3 | 6 | 2 | 5 | 5 |

6. Compute for the P80.

a. 54 b. 55 c. 56 d. 57

7. Compute for the P40.

a. 38 b. 39 c. 40d. 41

8. Compute for the D6.

a. 43 b. 44 c.45d.46

9. Compute for the D3.

a. 35 b. 34 c. 33 d. 32

10. Compute for the Q1.

a. 32.75 b.33.75 c. 34.75 d. 35