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PSY516 Assignment 2 Solution

Fall 2026

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PSY516 Assignment 2 Solution

Fall 2026 | Total Marks: 20 | Due Date: 11 November 2026

Name: VU Learning Hub

Data

This solution works with grouped age data for three urban groups. The ages run from 0 to 60 years in steps of 10 years. The counts for males and females are large. The counts for transgender persons are small.

Age Group (Years)	Male	Female	Transgender
0 - 10	245	236	9
10 - 20	238	241	8
20 - 30	252	267	7
30 - 40	201	198	5
40 - 50	139	134	4
50 - 60	82	76	2
Total	1157	1152	35

Question 1 (10 Marks) SPSS Data Entry

SPSS needs four variables for this data set. Age Group holds the six age ranges. Male and Female and Transgender hold the counts for each range. The Variable View table below shows the name and the type and the label and the measure for each variable. The Data View table below shows all six rows of data as they must be typed.

Guide to Variable View and Data View (SAMPLE - GUIDE ONLY)

The tables below show what Variable View and Data View must hold. They are guides only. They are not screenshots from SPSS.

Variable	Type	Label	Measure
Age-Group	String	Age Group in Years	Nominal
Male	Numeric	Male Frequency	Scale
Female	Numeric	Female Frequency	Scale
Transgender	Numeric	Transgender Frequency	Scale

Data View must hold the six rows below.

Age Group (Years)	Male	Female	Transgender
0 - 10	245	236	9
10 - 20	238	241	8
20 - 30	252	267	7
30 - 40	201	198	5
40 - 50	139	134	4
50 - 60	82	76	2
Total	1157	1152	35

The screenshots of Variable View and Data View must come from real SPSS. A student must open SPSS and type the data and take the two screenshots and paste them in the Word file.

Question 2 (10 Marks) Mean Median and Mode

Each age group is worked with its centre value. The centre values are 5 for the first group and 15 for the second group and 25 for the third group and 35 for the fourth group and 45 for the fifth group and 55 for the sixth group.

Mean = (sum of f × x) / (sum of f)

Median = L + ((N / 2 − cf) / f) × h

Mode = L + ((f1 − f0) / (2 × f1 − f0 − f2)) × h

Urban Male

Age Group	Midpoint x	Frequency f	f times x	Cumulative Frequency
0 - 10	5	245	1225	245
10 - 20	15	238	3570	483
20 - 30	25	252	6300	735
30 - 40	35	201	7035	936
40 - 50	45	139	6255	1075
50 - 60	55	82	4510	1157
Total		1157	28895	

For males the total count is 1157. The total of f times x is 28895. The mean is 28895 divided by 1157 which gives 24.97. The middle person is number 578.5. The count up to 20 years is 483. The count up to 30 years is 735. So the median falls in the 20 to 30 class. The median is 20 plus ((578.5 minus 483) divided by 252) times 10 which gives 23.79. The biggest count is 252 in the 20 to 30 class. So the mode falls in that class. The mode is 20 plus ((252 minus 238) divided by (504 minus 238 minus 201)) times 10 which gives 22.15.

Urban Female

Age Group	Midpoint x	Frequency f	f times x	Cumulative Frequency
0 - 10	5	236	1180	236
10 - 20	15	241	3615	477
20 - 30	25	267	6675	744
30 - 40	35	198	6930	942
40 - 50	45	134	6030	1076
50 - 60	55	76	4180	1152
Total		1152	28610	

For females the total count is 1152. The total of f times x is 28610. The mean is 28610 divided by 1152 which gives 24.83. The middle person is

number 576. The count up to 20 years is 477. The count up to 30 years is 744. So the median falls in the 20 to 30 class. The median is 20 plus ((576 minus 477) divided by 267) times 10 which gives 23.71. The biggest count is 267 in the 20 to 30 class. So the mode falls in that class. The mode is 20 plus ((267 minus 241) divided by (534 minus 241 minus 198)) times 10 which gives 22.74.

Urban Transgender

Age Group	Midpoint x	Frequency f	f times x	Cumulative Frequency
0 - 10	5	9	45	9
10 - 20	15	8	120	17
20 - 30	25	7	175	24
30 - 40	35	5	175	29
40 - 50	45	4	180	33
50 - 60	55	2	110	35
Total		35	805	

For transgender persons the total count is 35. The total of f times x is 805. The mean is 805 divided by 35 which gives 23.00. The middle person is number 17.5. The count up to 20 years is 17. The count up to 30 years is 24. So the median falls in the 20 to 30 class. The median is 20 plus ((17.5 minus 17) divided by 7) times 10 which gives 20.71. The biggest count is 9 in the 0 to 10 class. So the mode falls in that class. The mode is 0 plus ((9 minus 0) divided by (18 minus 0 minus 8)) times 10 which gives 9.00.

Summary

Group	Mean	Median	Mode
Urban Male	24.97	23.79	22.15
Urban Female	24.83	23.71	22.74
Urban Transgender	23.00	20.71	9.00

Most Suitable Measure

The mean is above the median and the median is above the mode in all

three groups. That pattern means the age data stretch more to the right. A few older ages pull the mean up. The mode rests on a single class so it can shift with a small change in counts. This is most clear in the transgender group where 9 and 8 and 7 are close to each other. The median stays in the middle of the data and does not move with the tail. So the median fits each group best.