

Math 3 Assignment-3



From:

AL AZHAR RIZQI RIFA'I FIRDAUS

Class:

2 I

Absence:

01

Student Number Identity:

2241720263

Department:

Information Technology

Study Program:

Informatics Engineering

Question 1, Question 3, Question 4 Manual, Question 5

AL AZHAR

No. _____
Date _____

Question 1

5 - 9	4	7	28	score : 100 corrector : Balqis
10 - 14	9	12	108	
15 - 19	16	17	272	
20 - 24	12	22	264	
25 - 29	6	27	162	
30 - 34	5	32	96	
	50		930	

•) mean = $\frac{930}{50} = 18,6$

•) median

5 - 9	4	4	$50/2 = 25$
10 - 14	9	13	$b = 15 - 0,5 = 14,5$
15 - 19	16	29	$P = 5$
20 - 24	12	41	$F = 13$
25 - 29	6	47	$f = 16$
30 - 34	5	50	

$b + P \left(\frac{1/n - F}{f} \right)$

$= 14,5 + 5 \left(\frac{25 - 13}{16} \right)$

$= 14,5 + 5 \cdot \frac{12}{16}$

$= 14,5 + 3,75$

$= 18,25$

•) modus $L + c \left(\frac{1}{1+U} \right)$

$L = 14,5$

$c = 5$

$l = 16 - 9$

$U = 16 - 12$

$14,5 + 5 \left(\frac{16 - 9}{(16 - 9) + (16 - 12)} \right)$

$= 14,5 + 5 \left(\frac{7}{7 + 4} \right)$

$14,5 + 5 \left(\frac{7}{11} \right) = 14,5 + 3,18$

$= 17,68$

estudee 30 lines (6mm spaced)

Question 3 manual

•) mean

$$(75 + 70 + 60 + 54 + 60 + 80 + 60 + 80 + 75 + 70 + 55) / 11$$

$$= 759 / 11 = 69,1$$

•) median

54, 55, 60, 60, 60, 70, 70, 75, 80, 80, 85

$$= 70,1$$

•) modus

$$= 60,1$$

Question 4

5 - 10	4	4	$38/2 = 19$	$L + C \left(\frac{1}{140} \right)$
11 - 16	6	10	$L = 16,5$	
17 - 22	12	22	$C = 6$	
23 - 28	8	30	$l = 12 - 6$	
29 - 34	8	38	$U = 12 - 8$	
			$= 16,5 + 6 \left(\frac{6}{6+4} \right)$	
			$= 16,5 + 6 \left(\frac{6}{10} \right)$	
			$= 16,5 + 3,6 = 20,1$	

Question 5

11 - 20	3	3	$40/2 = 20$	$b + F \left(\frac{1}{n} + F \right)$
21 - 30	5	8	$b = 40,5$	F
31 - 40	10	18	$F = 10$	
41 - 50	11	29	$F = 18$	
51 - 60	8	37	$F = 11$	
61 - 70	3	40	$= 40,5 + 10 \left(\frac{20 - 18}{11} \right)$	
			$= 40,5 + 10 \left(\frac{2}{11} \right)$	

•) median

$$= 40,5 + 1,81 = 42,31$$

•) mean

11 - 20	3	15,5	46,5
21 - 30	5	25,5	127,5
31 - 40	10	35,5	355
41 - 50	11	45,5	500,5
51 - 60	8	55,5	444
61 - 70	3	65,5	196,5
	40		1670

$$1670 / 40 = 41,75$$

Question 2

1. Budget Planning:

- **Mean:** Calculating the mean income helps in setting a realistic budget by providing an average income figure. This ensures that expenses are planned in a way that the majority of expenses can be covered without relying on outliers.
- **Median:** When planning a budget, the median income is useful to understand the middle point of income distribution. This helps prevent skewed budget decisions that might result from extremely high or low incomes.
- **Mode:** Identifying the mode of expenses (most frequently occurring) allows you to prioritize necessary recurring expenses over infrequent or one-time costs, ensuring a more balanced budget.

2. Grading Systems:

- **Mean:** Computing the mean of test scores in a class helps teachers assess overall class performance. It provides an average performance level and can guide adjustments in teaching methods or materials.
- **Median:** Using the median score helps in identifying the middle performance, which is less affected by extreme high or low scores. This gives a better representation of the typical student's performance.
- **Mode:** Recognizing the mode score helps identify the most common performance level, allowing teachers to focus on areas where many students may be struggling or excelling.

3. Inventory Management:

- **Mean:** Calculating the mean demand for a product over time helps businesses set inventory levels. This ensures that enough stock is on hand to meet typical demand while avoiding overstocking or shortages.
- **Median:** In cases of fluctuating demand, using the median demand can provide a more stable basis for inventory management. It prevents the impact of occasional spikes or dips in demand.
- **Mode:** Identifying the mode of demand (most frequently requested quantity) helps optimize inventory for the most popular products, reducing the risk of stockouts and maximizing sales.

Question 3

```
Question 3
import numpy as np
import statistics as sc

nilai = [75,70,60,54,60,80,60,60,80,95,70,55]

x = np.mean(nilai)
y = np.median(nilai)
z = sc.mode(nilai)

print(x, y, z)
```

69.0 70.0 60