

Activity for the Arithmetic Mean Calculation

This is an activity for the arithmetic mean calculation.

Question 1 Here is a table from which we need to calculate the population descriptive statistics.

| Class | f | M | $f \cdot M$ | $f \cdot M^2$ |
|---------|-----|-----|-------------|---------------|
| 1 – 3 | 16 | 2 | 32 | 64 |
| 3 – 5 | 2 | 4 | 8 | 32 |
| 5 – 7 | 4 | 6 | 24 | 144 |
| 7 – 9 | 3 | 8 | 24 | 192 |
| 9 – 11 | 9 | 10 | 90 | 900 |
| 11 – 13 | 6 | 12 | 72 | 864 |
| | 40 | | 250 | 2196 |

Then we can calculate the following:

- (a) The mean $\mu = \boxed{6.25}$
- (b) The mode $\tilde{x} = \boxed{8}$
- (c) The variance $\sigma^2 = \boxed{15.84}$
- (d) The standard deviation $\sigma = \boxed{3.98}$

Question 2 Use the following table to calculate the mean, mean absolute deviation, variance and standard deviation for the following sample data.

Learning outcomes: Understand how to calculate the arithmetic mean. Calculate the arithmetic mean of a set of data.

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| <i>Class</i> | <i>f</i> | <i>M</i> | <i>f · M</i> | <i>f · M²</i> |
|--------------|----------|----------|--------------|--------------------------|
| 10 – 15 | 6 | 12.5 | 75.0 | 937.50 |
| 15 – 20 | 22 | 17.5 | 385.0 | 6,737.50 |
| 20 – 25 | 35 | 22.5 | 787.5 | 17,718.75 |
| 25 – 30 | 29 | 27.5 | 797.5 | 21,931.25 |
| 30 – 35 | 16 | 32.5 | 520.0 | 16,900.00 |
| 35 – 40 | 8 | 37.5 | 300.0 | 11,250.00 |
| 40 – 45 | 4 | 42.5 | 170.0 | 7,225.00 |
| 45 – 50 | 2 | 47.5 | 95.0 | 4,512.50 |
| | 122 | | 3,130.0 | 87,212.50 |

Then we can get the following:

- (a) The mean is = 25.66
- (b) The mode is = 22.5
- (c) The variance is = 57.11
- (d) The standard deviation is = 7.56

Question 3

Question 4

Question 5