

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

**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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| Class   | $f$ | $M$  | $f \cdot M$ | $f \cdot M^2$ |
|---------|-----|------|-------------|---------------|
| 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