



**Finding the arithmetic mean.**

**Class Discussion**

Suppose 6 children are to share sweets as shown in the table below. If they are given sweets in accordance with this list, some will not have the same number of sweets. If each child is to get the same number of sweets, those with more sweets will have to give some of their sweets to those with fewer sweets. This can be done as follows.

- |                                  |   |
|----------------------------------|---|
| 1 <sup>st</sup> child gets ..... | 2 |
| 2 <sup>nd</sup> child gets ..... | 4 |
| 3 <sup>rd</sup> child gets ..... | 6 |
| 4 <sup>th</sup> child gets ..... | 2 |
| 5 <sup>th</sup> child gets ..... | 8 |
| 6 <sup>th</sup> child gets ..... | 2 |

$$\begin{aligned} \frac{\text{Sum of all sweets}}{\text{number of children}} &= \frac{2 + 4 + 6 + 2 + 8 + 2}{6} \\ &= \frac{24}{6} \\ &= 4 \text{ sweets each} \end{aligned}$$

So on average each child will get 4 sweets.

$$\text{Average (Mean)} = \frac{\text{sum of all given items}}{\text{number of the given items}}$$



**Note: To get the mean, (average) we divide the sum of all items by the number of items.**

**Example 1**

What is the arithmetic mean for 2, 4, 7, 2, 8 and 1?

$$\begin{aligned} &= \frac{\text{sum of all given items}}{\text{number of the given items}} \\ &= \frac{2 + 4 + 7 + 2 + 8 + 1}{6} \\ &= 4 \frac{24}{6} \\ &= \frac{24}{6} \\ &= 4 \end{aligned}$$

**Example 2**

Find the mean (average) of the following numbers 2, 4, 5, 6, 3, 8, 7.

$$\begin{aligned} \text{Average} &= \frac{\text{sum of all items}}{\text{number of items}} \\ &= \frac{2 + 4 + 5 + 6 + 3 + 8 + 7}{7} \\ &= \frac{35}{7} \\ &= 5 \end{aligned}$$

So the mean is 5

**Exercise 8:7**

Find the mean of the following numbers.

- |                        |                            |
|------------------------|----------------------------|
| 1. 3, 6, 7, 4, 5       | 7. 24, 23, 21, 12          |
| 2. 4, 2, 6, 8          | 8. 40%, 20%, 60%, 80%      |
| 3. 5, 7, 2, 6, 10, 6   | 9. 30%, 70%, 60%, 40%, 50% |
| 4. 7, 8, 7, 8, 5, 2, 5 | 10. 20, 22, 28, 20         |
| 5. 10, 12, 14, 10      | 11. 2, 4, 6, 7, 5          |
| 6. 5, 10, 8, 7, 4, 8   | 12. 86%, 74%, 67%, 93%     |