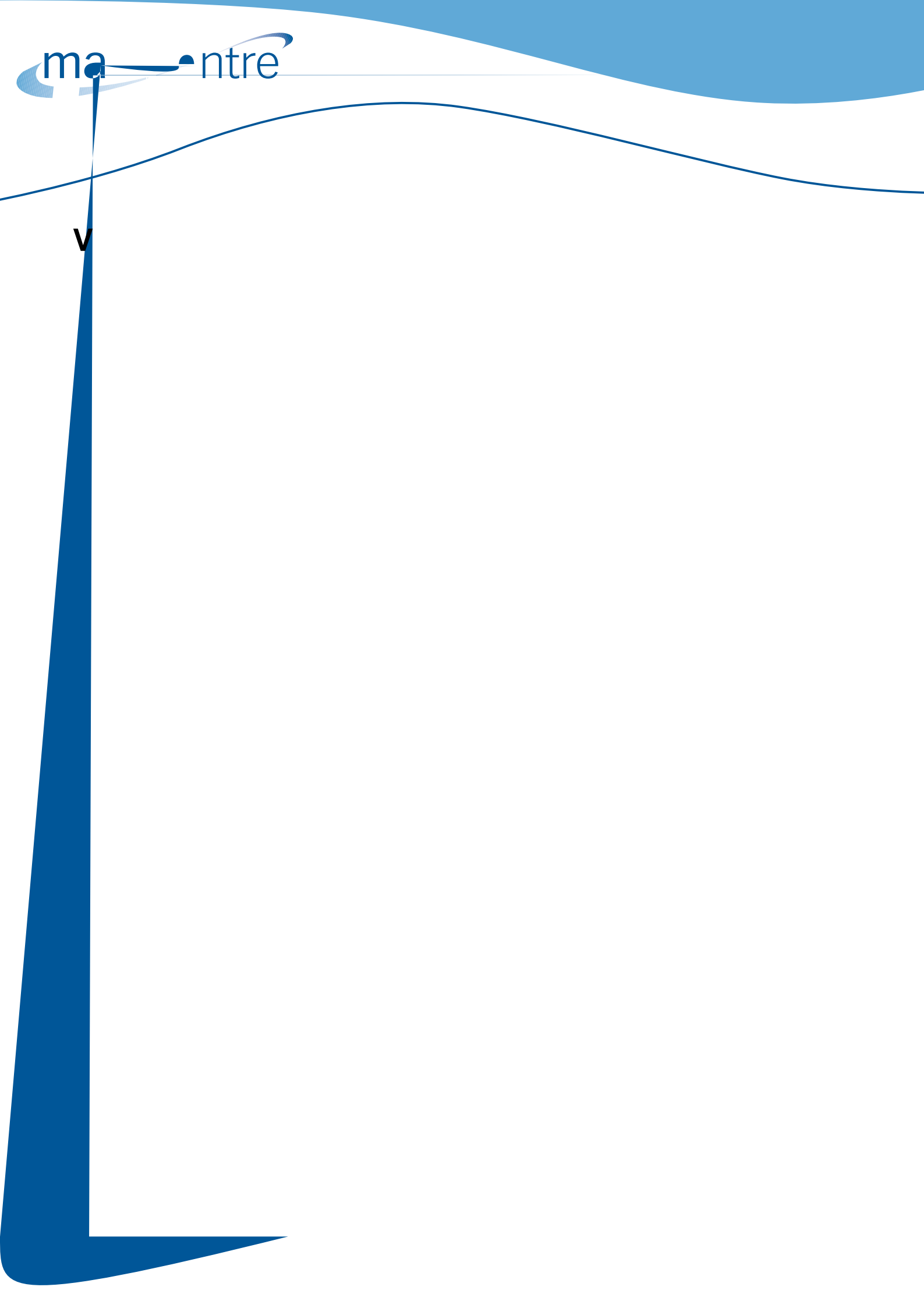


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**Method 2:**

$$s^2 = \frac{\sum x^2}{n} - \bar{x}^2$$

$x$	6	7	10	11	11	13	16	18	25	Total
$x^2$	36	49	100	121	121	169	256	324	625	1801

$$\begin{aligned}
 s^2 &= \frac{1801}{9} - 13^2 \\
 &= 200.11 - 169 \\
 &= 31.11 \quad (2\text{dp})
 \end{aligned}$$

**Standard Deviation ( )**

Since the variance is measured in terms of  $s^2$ , we often wish to use the standard deviation where  $s = \sqrt{\text{variance}}$ . The standard deviation, unlike the variance, will be measured in the same units as the original data.

In the above example  $s = \sqrt{31.11} = 5.58$  (2 dp)

**Exercises**

Find the variance and standard deviation of the following correct to 2 decimal places:

1. a) 10, 16, 12, 15, 9, 16, 10, 17, 12, 15
- b) 74, 72, 83, 96, 64, 79, 88, 69
- c) £326, £438, £375, £366, £419, £424

**Answers**

1. a) 7.76, 2.79      b) 97.36, 9.87      c) £<sup>2</sup>1 531.22, £39.13