

**1. Problem**

From a very large population, a small sample of measurements was taken.

130	129	123	126
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Please calculate the average absolute deviation using the following formula:

$$AAD = \frac{\sum |x - \bar{x}|}{n}$$

**Solution**

We fill out the table column by column.

$x$	$x - \bar{x}$	$ x - \bar{x} $
130	3	3
129	2	2
123	-4	4
126	-1	1
=====	=====	=====
$\sum x = 508$		$\sum  x - \bar{x}  = 10$
$\bar{x} = 127$		

We are ready for the formula.

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

$$= \frac{10}{4}$$

$$= \boxed{2.5}$$

**2. Problem**

From a very large population, a small sample of measurements was taken.

92	88	89	96	98	95
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Please calculate the (Bessel corrected) sample standard deviation using the following formula:

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

**Solution**

We fill out the table column by column.

$x$	$x - \bar{x}$	$(x - \bar{x})^2$
92	-1	1
88	-5	25
89	-4	16
96	3	9
98	5	25
95	2	4
=====	=====	=====
$\sum x = 558$		$\sum (x - \bar{x})^2 = 80$
$\bar{x} = 93$		

We are ready for the formula.

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

$$= \sqrt{\frac{80}{6 - 1}}$$

$$= \sqrt{16}$$

$$= \boxed{4}$$