

Standard Deviation Worksheet - answers

STATISTICS
Standard Deviation

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Statistics: Standard Deviation answer sheet

Task 1 - Data Set 1:

Mean ($\bar{x}$) = 11

n = 5

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
6	-5	25
15	4	16
12	1	1
12	1	1
11	0	0
		$\Sigma (x - \bar{x})^2 = 43$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 10.75$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 3.3$$

Task 1 - Data Set 2:

Mean ($\bar{x}$) = 29

n = 6

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
32	3	9
23	-6	36
31	2	4
28	-1	1
32	3	9
36	7	49
		$\Sigma (x - \bar{x})^2 = 108$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 21.6$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 4.6$$

Task 1 - Data Set 3:Mean ($\bar{x}$) = 20

n = 10

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
10	-10	100
12	-8	64
25	5	25
3	-17	289
37	17	289
13	-7	49
12	-8	64
18	-2	4
41	21	441
33	13	169
		$\Sigma (x - \bar{x})^2 = 1494$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 166$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 12.9$$

Task 1 - Data Set 4:

Mean ($\bar{x}$) = 11

n = 14

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
1	-10	100
3	-8	64
14	3	9
7	-4	16
6	-5	25
12	1	1
18	7	49
7	-4	16
23	12	144
10	-1	1
5	-6	36
14	3	9
25	14	196
8	-3	9
		$\Sigma (x - \bar{x})^2 = 675$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 51.9$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 7.2$$

Task 2:Mean ($\bar{x}$) = 11

n = 9

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
5	-6	36
10	-1	1
12	1	1
13	2	4
18	7	49
6	-5	25
9	-2	4
13	2	4
15	4	16
		$\Sigma (x - \bar{x})^2 = 140$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 17.5$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 4.2$$

Task 3:Mean ($\bar{x}$) = 12

n = 9

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
6	-6	36
11	-1	1
13	1	1
14	2	4
19	7	49
7	-5	25
8	-4	16
14	2	4
16	4	16
		$\Sigma (x - \bar{x})^2 = 152$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 19$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 4.4$$

Task 4:Mean ($\bar{x}$) = 13

n = 9

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
7	-6	36
12	-1	1
14	1	1
15	2	4
20	7	49
8	-5	25
9	-4	16
15	2	4
17	4	16
		$\Sigma (x - \bar{x})^2 = 152$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 19$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 4.4$$

Task 5:Mean ($\bar{x}$) = 12

n = 9

Values of x	Values of $x - \bar{x}$	Values of $(x - \bar{x})^2$
8	-4	16
10	-2	4
9	-3	9
11	-1	1
21	9	81
7	-5	25
8	-4	16
16	4	16
17	5	25
		$\Sigma (x - \bar{x})^2 = 193$

$$\frac{\Sigma (x - \bar{x})^2}{n-1} = 24.1$$

$$\sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}} = 4.9$$

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