

A2.S.4: Dispersion 4: Calculate measures of dispersion (range, quartiles, interquartile range, standard deviation, variance) for both samples and populations

- 1 The accompanying table shows the scores on a classroom test.

x_i	f_i
100	7
90	10
80	4
70	4

What is the population standard deviation for this set of scores?

- 1) 10.2
- 2) 10.4
- 3) 25
- 4) 88

- 2 The table below displays the number of siblings of each of the 20 students in a class.

Number of Siblings	Frequency
0	2
1	5
2	7
3	4
4	2

What is the population standard deviation, to the nearest hundredth, for this group?

- 1) 1.11
- 2) 1.12
- 3) 1.14
- 4) 1.15

- 3 The scores of one class on the Unit 2 mathematics test are shown in the table below.

Unit 2 Mathematics Test	
Test Score	Frequency
96	1
92	2
84	5
80	3
76	6
72	3
68	2

Find the population standard deviation of these scores, to the nearest tenth.

- 4 The table below shows the scores that a class of students received on their latest review quiz.

Score	Frequency
95	6
90	7
85	8
80	4

Find the standard deviation of these scores to the nearest tenth.

- 5 Find, to the *nearest tenth*, the standard deviation of this set of data.

x_i	f_i
87	3
89	4
91	3
93	6
95	2

- 6 Using the scores in the table below, find the standard deviation to the *nearest tenth*.

Scores	Frequency
60	2
65	6
70	4
75	8
80	5

- 7 The table below shows the set of score data for an English examination.

x_i	f_i
100	2
90	3
80	6
70	5
60	4

Find the standard deviation of these scores to the *nearest tenth*.

- 8 The table below shows the scores of 40 students on an advanced placement mathematics examination. Find the standard deviation to the *nearest tenth*.

Score	Number of Students
5	8
4	12
3	14
2	4
1	2

- 9 The table below shows raw scores on an 80-question entrance examination. Find the standard deviation of these examination scores to the *nearest tenth*.

x_i	f_i
40	5
50	4
60	6
70	3
80	2

- 10 Using the accompanying set of data, find the standard deviation to the *nearest tenth*.

Measure (x_i)	Frequency (f_i)
80	5
85	7
90	9
95	4

- 11 A random sample of readings was taken at the site of a radioactive spill. In the information chart below, x is the contamination level in microcuries and f is the number of readings at each contamination level. Compute the sample standard deviation of the contamination levels to the *nearest tenth*.

x	5	10	15	20	25	30	35
f	6	18	10	5	3	2	1

- 12 The table below shows the grades for a college statistics class.

Grade (x_i)	Frequency (f_i)
92	2
87	3
82	6
77	9
72	10
67	6
62	4

Find the mean of the data. Find the standard deviation to the *nearest tenth*.

- 13 The table below represents the weights of 10 girls from the seventh grade class. Find the standard deviation of these weights to the *nearest tenth*.

Measure of Weight (x_i)	Frequency (f_i)
56	1
75	2
82	2
100	3
110	1
120	1

- 14 The table below shows the grades for a class of students in Course III math.

Grade x_i	Frequency f_i
98	2
94	1
90	3
86	1
82	4
75	1
71	2
69	1

Find \bar{x} , the mean of the data. Find, to the *nearest tenth*, the standard deviation of the data. Which statement is true with this given set of data?

- (1) median > mode
(2) median = mode
(3) median < mode

- 15 The table below represents scores earned by students on a math exam. Find the standard deviation of these scores to the *nearest tenth*.

Score x_i	Frequency f_i
88	6
84	7
76	5
72	2

- 16 The table below represents the weight, in pounds, of the students in Mrs. Grabenstein's homeroom.

x_i	f_i
68	4
76	4
80	3
82	6
83	2
86	1

Using this set of data, find the mean, median, mode, and standard deviation to the *nearest tenth*.

- 17 The table below shows the height in inches of ten girls on a basketball team.

Height (x_i)	Frequency (f_i)
62	2
66	1
68	2
72	3
74	2

Find the mode, median, and standard deviation of these heights to the *nearest tenth*.

- 18 Using the following set of data, find the mean and the standard deviation to the *nearest tenth*.

x_i measure	f_i frequency
50	4
58	4
62	3
64	6
65	2
68	1

- 19 Find, to the *nearest tenth*, the standard deviation for the following set of data.

x_i measure	f_i frequency
60	1
75	4
80	3
90	2

A2.S.4: Dispersion 4: Calculate measures of dispersion (range, quartiles, interquartile range, standard deviation, variance) for both samples and populations**Answer Section**

1 ANS: 1 REF: 060917b

2 ANS: 2 REF: 081509a2

3 ANS:
7.4

REF: 061029a2

4 ANS:
5.1

REF: 080342siii

5 ANS:
2.6

REF: 080039siii

6 ANS:
6.3

REF: 010037siii

7 ANS:
12.3

REF: 019739siii

8 ANS:
1.1

REF: 019636siii

9 ANS:
12.8

REF: 069536siii

10 ANS:
4.9

REF: 019539siii

11 ANS:
7.2

REF: 089438siii

12 ANS:
75, 7.9

REF: 069036siii

13 ANS:
18.3

REF: 018940siii

14 ANS:
84, 9.2, 2

REF: 018742siii

15 ANS:
5.6

REF: 088640siii

16 ANS:
78, 80, 82, 5.6

REF: 068642siii

17 ANS:
72, 70, 4.3

REF: 088540siii

18 ANS:
60, 5.6

REF: 018441siii

19 ANS:
8.1

REF: 068142siii