

Name _____

Practice

Population Variance and Standard Deviation

After you complete this assignment, check the answers with the answer sheet. The table must be filled in for credit. Each student is responsible for his/her own work and must have his/her own paper to turn in.

The following ages are represented in a college math class:

19, 16, 21, 20, 19, 35, 42, 20, 25, 19, 18

1. What is the mean of the data set? (round to the nearest whole number)

2. Complete the following chart with the squared difference:

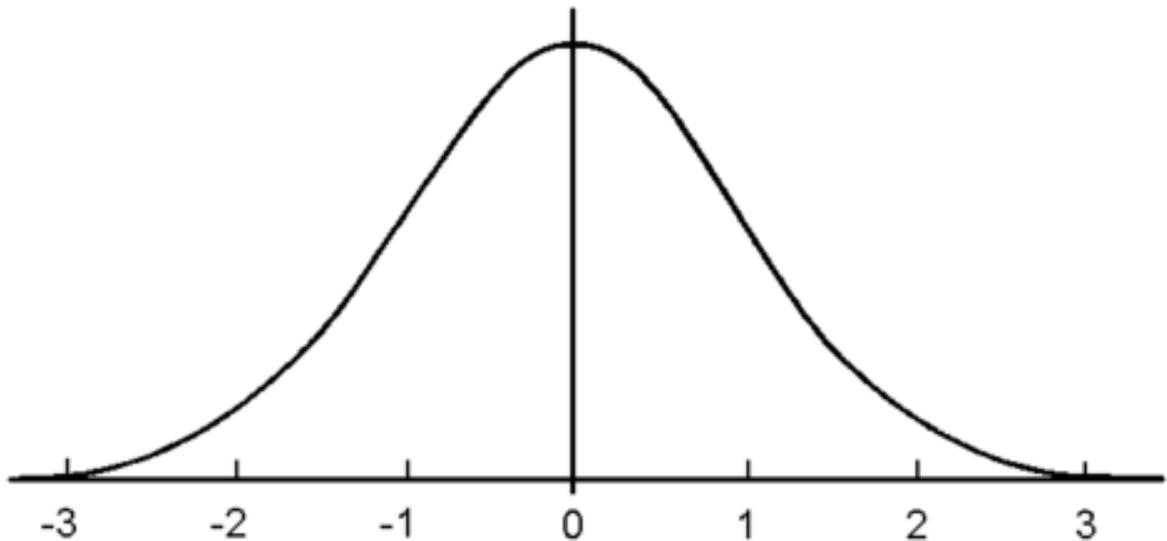
Age	Age – Mean= Difference	Difference ²
19		
16		
21		
20		
19		
35		
42		
20		
25		
19		
18		

3. The total of the squared difference is _____.

4. Divide the total by the number of terms (11) – Show your steps. Round to the nearest tenth.

5. Square root the average of the squared differences (answer from #4). (This is the standard deviation.) (Round to the nearest tenth.)

6. Using your standard deviation, create a normal distribution of the data. Please write the value the mean below 0 and the value of each standard deviation below the curve. Indicate each data point (age) on the curve in the appropriate location using an “X”.



7. Does this data appear to be normally distributed? Why or why not?

8. Where do the majority of the ages cluster?

Name _____

Practice

Population Variance and Standard Deviation

After you complete this assignment, check the answers with the answer sheet. The table must be filled in for credit. Each student is responsible for his/her own work and must have his/her own paper to turn in.

The following ages are represented in a college math class:

19, 16, 21, 20, 19, 35, 42, 20, 25, 19, 18

1. What is the mean of the data set? (round to the nearest whole number)

23

2. Complete the following chart with the squared difference:

Age	Age – Mean= Difference	Difference ²
19	$19 - 23 = -4$	$-4^2 = 16$
16	$16 - 23 = -7$	$-7^2 = 49$
21	$21 - 23 = -2$	$-2^2 = 4$
20	$20 - 23 = -3$	$-3^2 = 9$
19	$19 - 23 = -4$	$-4^2 = 16$
35	$35 - 23 = 12$	$12^2 = 144$
42	$42 - 23 = 19$	$19^2 = 361$
20	$20 - 23 = -3$	$-3^2 = 9$
25	$25 - 23 = 2$	$2^2 = 4$
19	$19 - 23 = -4$	$-4^2 = 16$
18	$18 - 23 = -5$	$-5^2 = 25$

3. The total of the squared difference is (rounded to the nearest tenth)

653

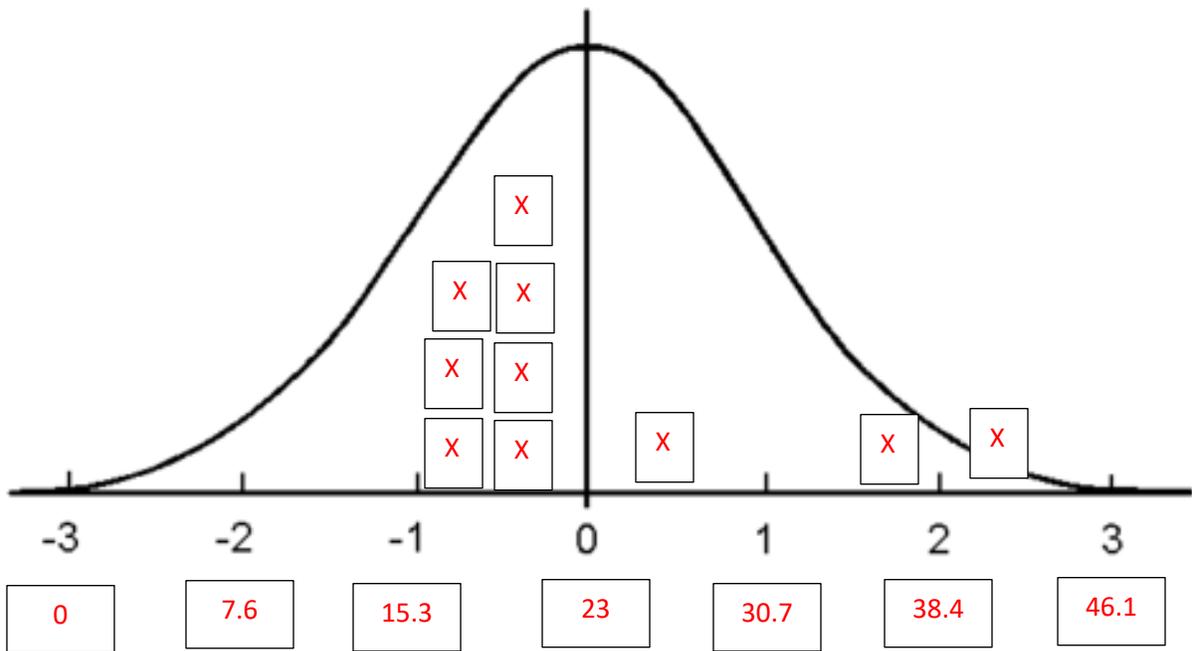
4. Divide the total by the number of terms (11) – Show your steps. Round to the nearest tenth.

$$\begin{aligned} & \frac{653}{11} \\ & = 59.3636 \\ & = 59.4 \end{aligned}$$

5. Square root the average of the squared differences (answer from #4). (This is the standard deviation.) (Round to the nearest tenth.)

$$\begin{aligned} & \sqrt{59.4} \\ & = 7.07 \\ & = 7.1 \end{aligned}$$

6. Using your standard deviation, create a normal distribution of the data. Please write the value the mean below 0 and the value of each standard deviation below the curve. Indicate each data point (age) on the curve in the appropriate location using an “X”.



7. Does this data appear to be normally distributed? Why or why not? **No, answers will vary.**
8. Where do the majority of the ages cluster? **-1 to +1 standard deviation**