Relative Position and z-Values

Unusual data values

California Residents Life Span

The following data is representing a sample of California Residents lifespan in years.

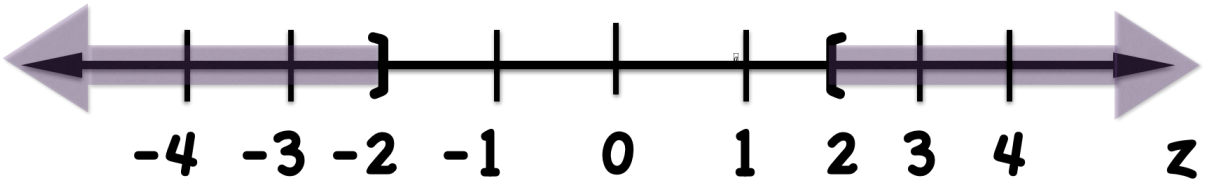
68, 45, 80, 34, 55, 67, 68, 88, 90, 25, 36, 45, 52, 68, 65, 70, 72, 45, 52, 89, 97, 64

Determine the following.

1. Mean. **Approximate to the nearest tenths.**
2. Standard Deviation. **Approximate to the nearest tenths.**
3. Determine the following **z values** for the table of lifespan data below and label which data values are unusual. **Approximate to the nearest hundredths.**

x	z	unusual (Y/N)
40		
88		
68		
25		
97		
72		
85		

4. Plot the z-values on the z-scale.



Sleep Time

The following data represents the amount of sleep time in hours for college students.

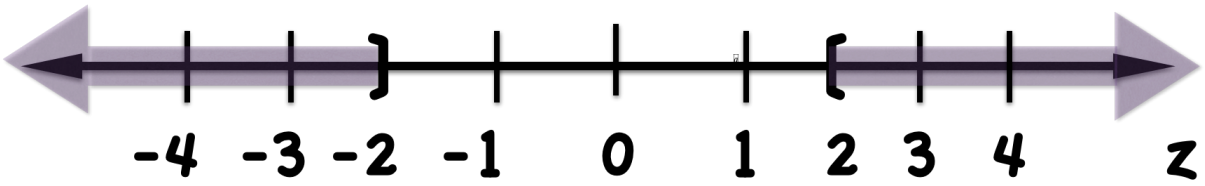
6, 0, 7, 4, 6, 7, 7, 6, 5, 8, 10, 4, 8, 5, 6,7,6, 7, 7, 5, 8, 6, 0, 7, 5, 4

Determine the following.

5. Mean. **Approximate to the nearest tenths.**
6. Standard Deviation. **Approximate to the nearest tenths.**
7. Determine the following **z values** for the table of sleep time data below and label which data values are unusual. **Approximate to the nearest hundredths.**

x	z	unusual (Y/N)
6		
0		
4		
2		
7		
5		
10		

8. Plot the z-values on the z-scale.



Annual Rainfall (inches) for St. Vegas

The following table illustrates the annual rainfall in inches for the fictional town of St. Vegas. Answer the following questions.

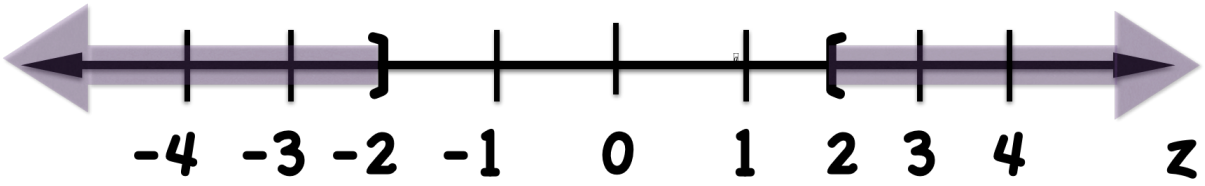
Year	Inches
2000	14.7
2001	12.8
2002	13.6
2003	6.5
2004	12.2
2005	10.8
2006	16.5
2007	13.2
2008	7.8
2009	14.9
2010	22.3
2011	5.4
2012	10.9

Determine the following.

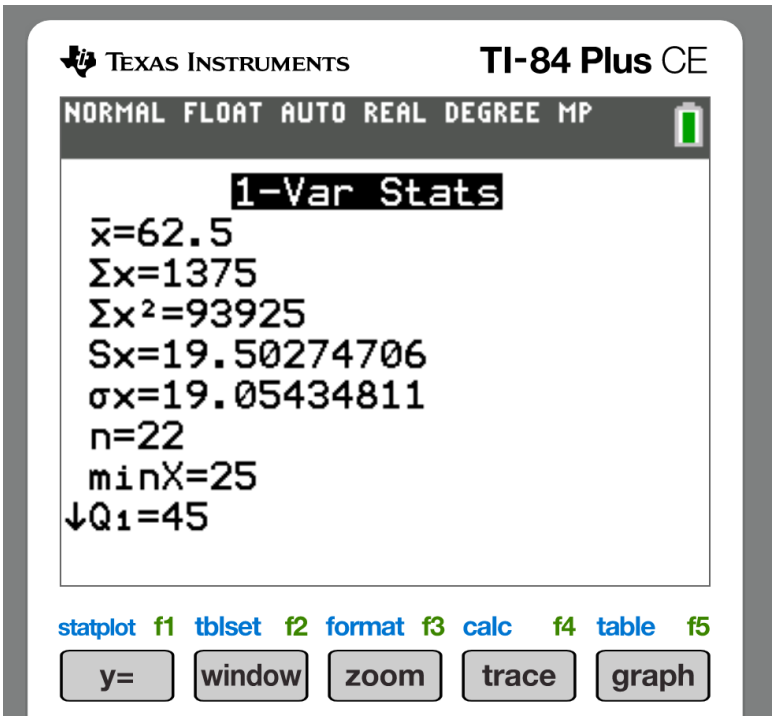
9. Mean. **Approximate to the nearest tenths.**
10. Standard Deviation. **Approximate to the nearest tenths.**
11. What years had unusual rainfall, if any? Yes, you must compute the z-values by filling in the table below. **Approximate z values to the hundredths.**

Year	Inches	z	Unusual
2000	14.7		
2001	12.8		
2002	13.6		
2003	6.5		
2004	12.2		
2005	10.8		
2006	16.5		
2007	13.2		
2008	7.8		
2009	14.9		
2010	22.3		
2011	5.4		
2012	10.9		

12. Plot the z-values on the z-scale.



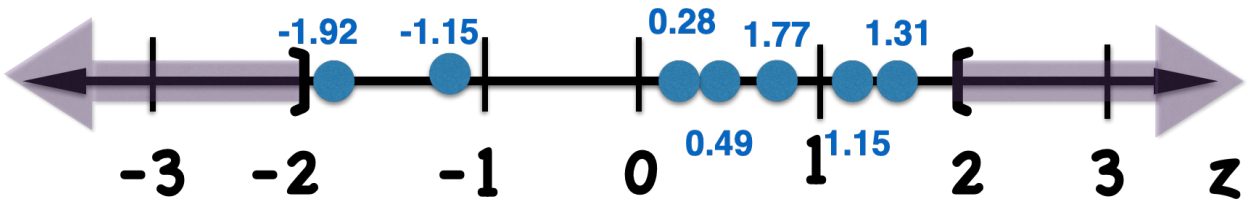
Answers

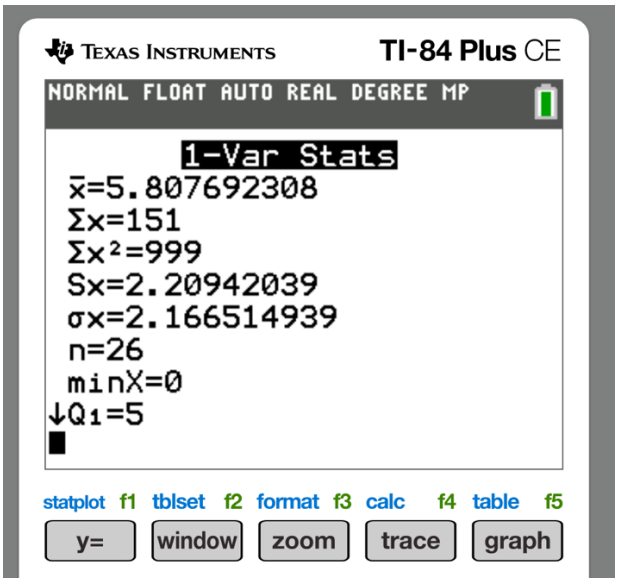


1. Mean=62.5
2. SD=10.5
3. Table

x	z	unusual (Y/N)
40	-1.15	N
88	1.31	N
68	0.28	N
25	-1.92	N
97	1.77	N
72	0.49	N
85	1.15	N

4. z Scale

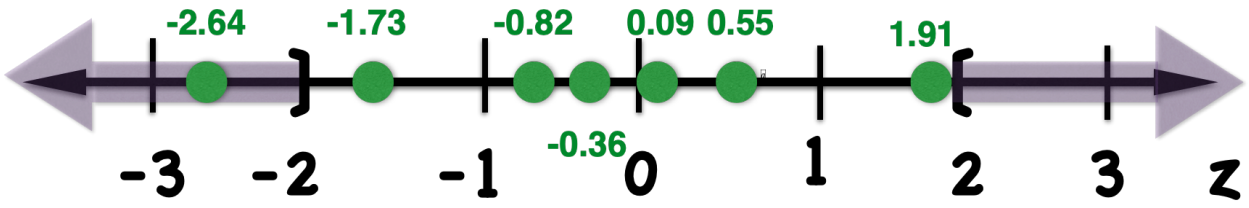


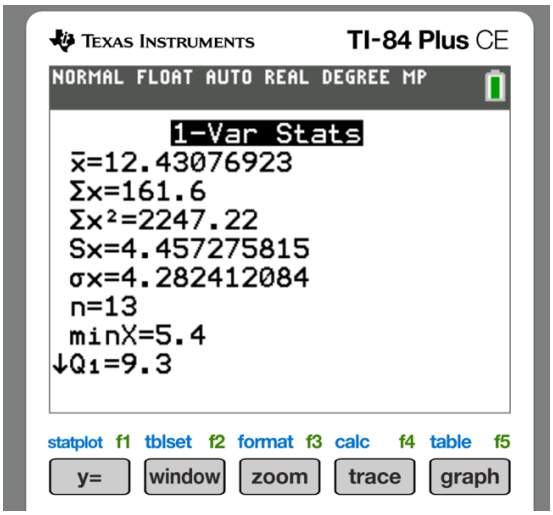


5. Mean=5.8
6. SD=2.2
7. Table

x	z	unusual (Y/N)
6	0.09	N
0	-2.64	Y
4	-0.82	N
2	-1.73	N
7	0.55	N
5	-0.36	N
10	1.91	N

8. z Scale





9. Mean=12.4
10. SD=4.5
11. Table

Year	Inches	z	Unusual
2000	14.7	0.51	N
2001	12.8	0.09	N
2002	13.6	0.27	N
2003	6.5	-1.31	N
2004	12.2	-0.04	N
2005	10.8	-0.36	N
2006	16.5	0.91	N
2007	13.2	0.18	N
2008	7.8	-1.02	N
2009	14.9	0.56	N
2010	22.3	2.20	Y
2011	5.4	-1.56	N
2012	10.9	-0.33	N

12. z -Scale