Assignment 4.2

Find the variance of the following set of data representing trees in california

3, 21, 98, 203, 17, 9

Variance is the average of the squared differences from the mean, 'generally the spread of data'

$$\text{Variance } \sigma^2 = \frac{\sum (x-\bar{x})^2}{N}$$

x	$x-\bar{x}$	$(x-\bar{x})^2$
3	-55.5	3080.25
21	-37.5	1406.25
98	39.5	1560.25
203	144.5	20880.25
17	-41.5	1722.25
9	-49.5	2450.25

$$\bar{x} = \frac{3+21+98+203+17+9}{6} = 58.5$$

$$\sum (x-\bar{x})^2 = 3080.25 + 1406.25 + 1560.25 + 20880.25 + 1722.25 + 2450.25$$

$$= 31,139.25$$

$$\text{Variance } \frac{\sum (x-\bar{x})^2}{N} = \frac{31139.25}{6}$$

Variance (s^2) = 5189.87