Assignment 15

***Problem Statement 1:***

You survey households in your area to find the average rent they are paying. Find the

standard deviation from the following data:

$1550, $1700, $900, $850, $1000, $950.

Mean 58.5

Variance 6219.9

std\_dev 78.86634263106157

***Problem Statement 2:***

Find the variance for the following set of data representing trees in California (heights in

feet):

3, 21, 98, 203, 17, 9

**Mean = (3+21+98+203+17+9)/6 = 58.5**

3-58.5= -55.5

Squared = 3080.25

21-58.5= -37.5

Squared =1406.25

98-58.5= 39.5

Squared = 1560.25

203-58.5= 144.5

Squared = 20,880.25

17-58.5= -41.5

Squared = 1722.25

9-58.5= -49.5

Squared = 2450.25

Mean of squared = (3080.25+1406.25+1560.25+20,880.25+ 1722.25+2450.25) /5

**Variance = 6219.9 feet**

***Problem 3:***

In a class on 100 students, 80 students passed in all subjects, 10 failed in one subject, 7

failed in two subjects and 3 failed in three subjects. Find the probability distribution of

the variable for number of subjects a student from the given class has failed in.

Solution:

For a random student,

The probability of failing in 0 subjects, P(X=0) = 0.8

The probability of failing in 1 subject, P(X=1) = 0.1

The probability of failing in 2 subjects, P(X=2) = 0.07

The probability of failing in 3 subjects, P(X=3) = 0.03

The probability distribution can be shown as:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| X | 0 | 1 | 2 | 3 |
| P(X) | 0.8 | 0.1 | 0.07 | 0.03 |