Problem Statement 1:

For $x_1, x_2, \ldots, x_n$

(i) Average = $\frac{\sum_{i=1}^{n} x_i}{n}$

(ii) Standard deviation is the square root of ($\frac{\sum_{i=1}^{n} x_i^2}{n}$ - $mean^2$)

Using The Following R code

```
> #Assignment 2 stats 1
>
> #Problem 1
>
> price = c(1550,1700,900,850,1000,950)
>
> # Mean
>
> mean_price = mean(x = price)
>
> mean_price
[1] 1158.333
>
> #Variance
> var = var(x = price)
>
> #Standard deviation
> std = sqrt(x = var)
> std
[1] 367.99


>
```

Answers

(i) Average price = $1158.33

(ii) Standard deviation = $367.99

Problem Statement 2

For $x_1, x_2, \ldots, x_n$

(i) Variance = ($\frac{\sum_{i=1}^{n} x_i^2}{n}$ - $mean^2$) were mean = $\frac{\sum_{i=1}^{n} x_i}{n}$

```
> #Problem 2
>
> trees = c(3,21,98,203,17,9)
>
> #Variance
> var_trees = var(trees)
> var_trees
[1] 6219.9
```

>

Answer

Variance = 6219.9 $feet^2$

Problem Statement 3

Let X be the random variable number subjects a student has failed.

Probability a student fails 0 subjects P(X = 0) = $\frac{80}{100}$

Probability a student fails 1 subjects P(X = 1) = $\frac{10}{100}$

Probability a student fails 0 subjects P(X = 2) = $\frac{7}{100}$

Probability a student fails 0 subjects P(X = 3) = $\frac{3}{100}$

Answer

For x_i the probability distribution function $f(x_i)$

x_i	0	1	2	3
$f(x_i)$	0.8	0.1	0.07	0.03