

Mean and Variance without Frequency

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```
x = [122 173 179 176 159 175 160 102 133 159 176 151 115 105 72  
170 128 112 101 123 117 93 117 99 90 113 128 129 134 178 105 107  
147 157 155 95 177 98 174 135 97 168 160 144 174];  
n = length(x);  
mean = sum(x)/n;  
fprintf("Mean: %f\n", mean);  
  
sumx = sum((x - mean).^2);  
std = (sumx/(n-1))^0.5;  
fprintf("Standard Deviation: %f\n", std);
```

OUTPUT

Mean: 135.155556

Standard Deviation: 30.853728

Mean and Variance with Frequency

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```
x_lo = [19 24 29 34 39 44];  
x_up = [23 28 33 38 43 48];  
f     = [15 20 30 18 12 5];
```

```
x_mid = (x_up + x_lo)/2;  
fx = x_mid.*f;  
mean = sum(fx)/sum(f);  
fprintf("Mean: %f\n", mean);
```

```
tmp = f.*(x_mid - mean).^2;  
var = sum(tmp)/(sum(f));  
std = var^0.5;  
fprintf("Standard Deviation: %f\n", std);
```

OUTPUT

Mean: 31.350000

Standard Deviation: 6.901268

Correlation Coefficient without Frequency

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```
x = [56 42 72 36 63 47 55 49 38 42 68 60 ];  
y = [147 125 160 118 149 128 150 145 115 140 152 155];
```

```
x_dash = sum(x)/length(x);  
y_dash = sum(y)/length(y);  
nume = sum((x - x_dash).*(y - y_dash));  
deno = sum((x - x_dash).^2).*sum((y - y_dash).^2);  
fnf = nume/(sqrt(deno));
```

```
fprintf("Correlation Constant: %f\n", fnf);
```

OUTPUT

Correlation Constant: 0.896139