3.1 & 3.2 WS

Correlation & Association

1. Graph the data and then find the correlation of the following data set by filling in the tables below:



 Describe the association (in context):

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| --- | --- | --- | --- | --- |
| **x** | **y** | **Zx** | **Zy** | **Zx Zy** |
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x̅ = \_\_\_\_\_ y̅ = \_\_\_\_\_ Σ Zx Zy= \_\_\_\_\_\_\_\_\_

Sx= \_\_\_\_\_ Sy=\_\_\_\_\_\_ $\frac{\sum\_{}^{}z\_{x}z\_{y}}{(n-1)}$ = r = \_\_\_\_\_\_

1. Ninth grade students at the Webb Schools go on a 30-mile backpacking trip each fall. Before leaving, students and their backpacks are weighed. The table below shows the body weights and backpack weights of 8 members of a group.

Graph the data and then find the correlation using the chart below:

**Name Weight (lb) Backpack Weight (lb)**

Amble 120 26

Belay 116 28

Cliff 103 24

Dodder 187 30

Elog 109 24

Faller 131 29

Gumper 165 35

Hock 116 28

Describe the association (in context):

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| --- | --- | --- | --- | --- |
| **X** | **y** | **Zx** | **Zy** | **Zx Zy** |
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x̅ = \_\_\_\_\_ y̅ = \_\_\_\_\_ Σ Zx Zy= \_\_\_\_\_\_\_\_\_

Sx= \_\_\_\_\_ Sy=\_\_\_\_\_\_ $\frac{\sum\_{}^{}z\_{x}z\_{y}}{(n-1)}$ = r = \_\_\_\_\_\_

1. A student wonders if tall women tend to date taller men. She measures herself, her dormitory roommate and the women in the next few rooms at her dorm in college. Then she measures the height of the next man that each woman dates. The data she collects is listed below. Graph the data and calculate the correlation between the heights of women and men:



**Women Heights (inches) Men Heights (inches)**

 66 72

 64 68

 66 70

 65 68

1. 71

65 65

Describe the association (in context):

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| --- | --- | --- | --- | --- |
| **x** | **y** | **Zx** | **Zy** | **Zx Zy** |
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x̅ = \_\_\_\_\_ y̅ = \_\_\_\_\_ Σ Zx Zy= \_\_\_\_\_\_\_\_\_

Sx= \_\_\_\_\_ Sy=\_\_\_\_\_\_ $\frac{\sum\_{}^{}z\_{x}z\_{y}}{(n-1)}$ = r = \_\_\_\_\_\_