Handout #1    **Arizona Cities**
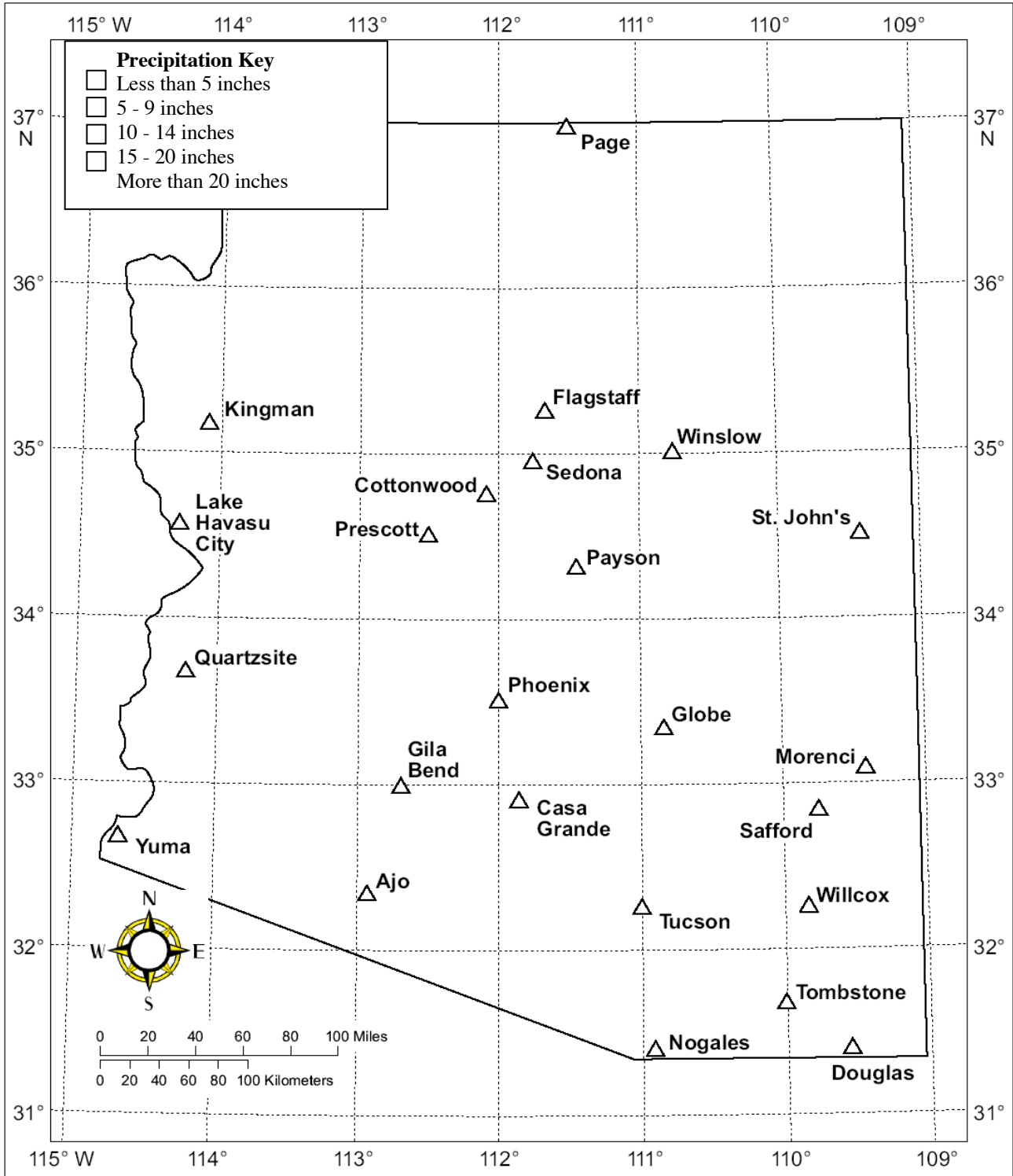


**Precipitation Key**
- ☐ Less than 5 inches
- ☐ 5 - 9 inches
- ☐ 10 - 14 inches
- ☐ 15 - 20 inches
- More than 20 inches

Page

Kingman

Flagstaff

Winslow

Cottonwood

Sedona

Lake
Havasu
City

Prescott

St. John's

Payson

Quartzsite

Phoenix

Globe

Gila
Bend

Morenci

Casa
Grande

Safford

Yuma

Ajo

Willcox

Tucson

Tombstone

Nogales

Douglas

0   20   40   60   80   100 Miles

0   20  40  60  80  100 Kilometers

Arizona's Cities, with Latitude and Longitude

**ARIZONA**
GEOGRAPHIC ALLIANCE

**ARIZONA**
GEOGRAPHIC ALLIANCE

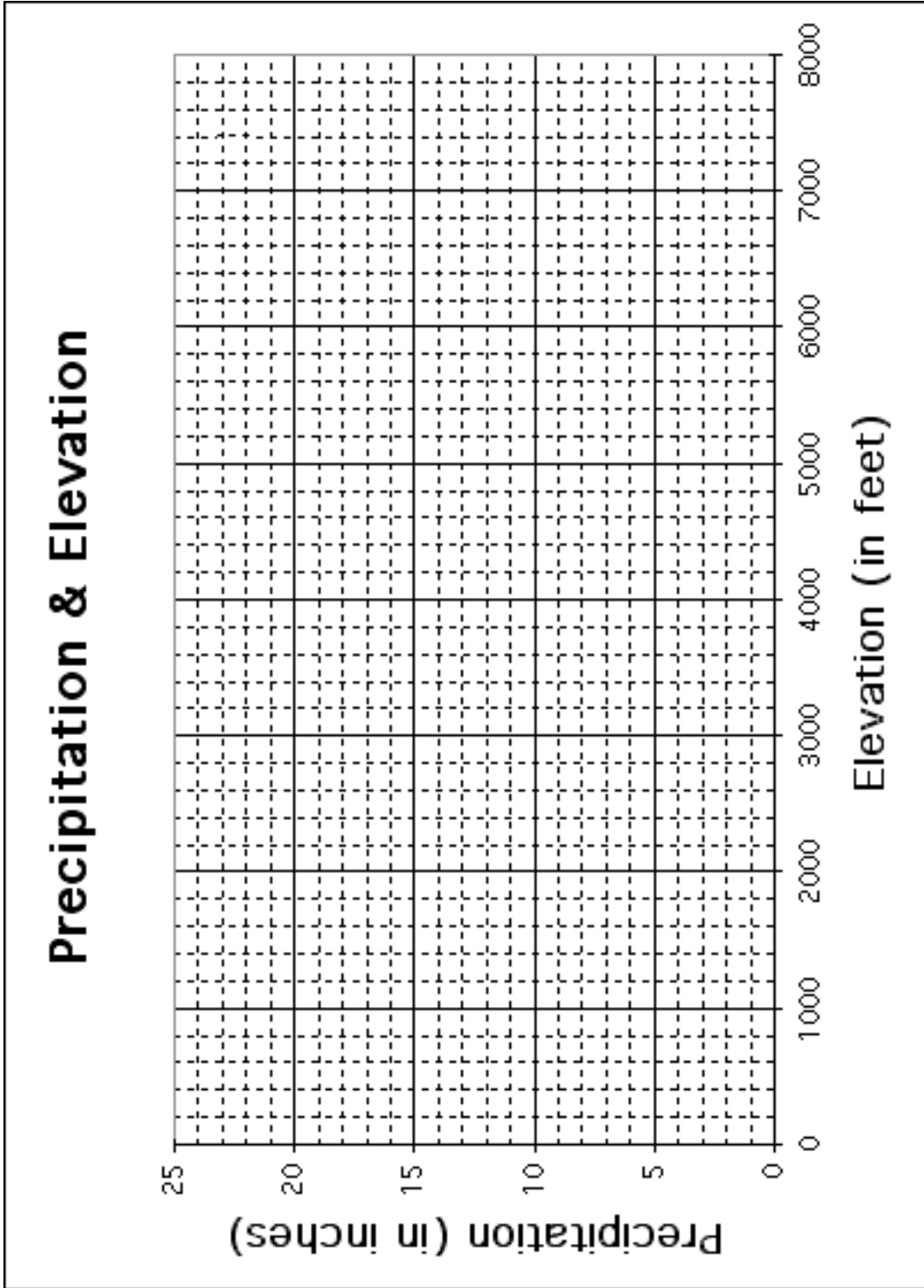# Average Annual Rainfall and Elevations of Arizona Cities

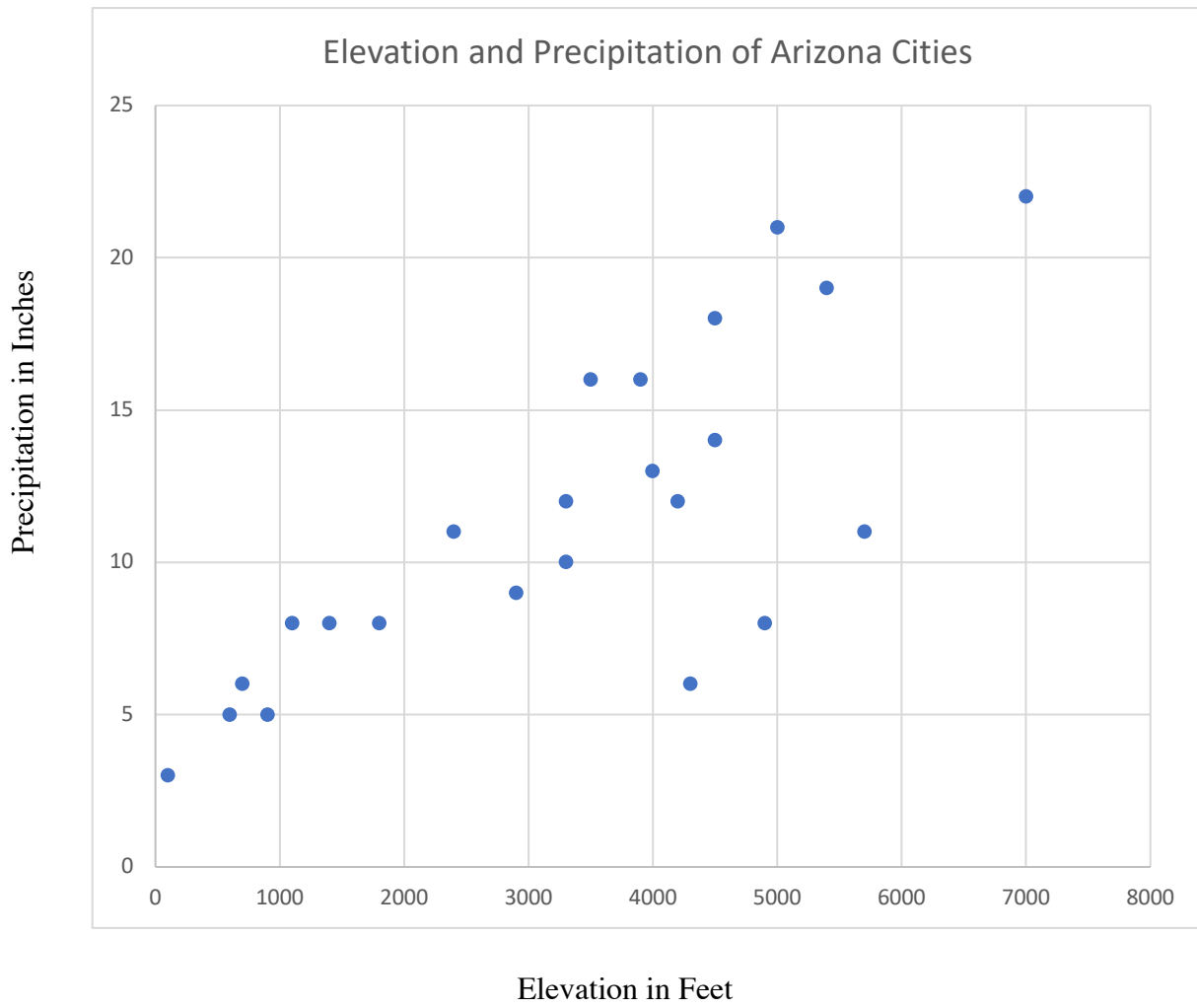| Name of City | Elevation (in feet) | Elevation (rounded to the nearest hundred) | Annual Average Precipitation (in inches) | Precipitation (rounded to nearest whole number) |
|---|---|---|---|---|
| Ajo | 1,798 | | 8.37 | |
| Casa Grande | 1,398 | | 8.35 | |
| Cottonwood | 3,320 | | 11.67 | |
| Douglas | 3,990 | | 13.44 | |
| Flagstaff | 7,000 | | 22.31 | |
| Gila Bend | 735 | | 6.02 | |
| Globe | 3,500 | | 15.90 | |
| Kingman | 3,345 | | 10.32 | |
| Lake Havasu City | 575 | | 4.57 | |
| Nogales | 3,865 | | 16.02 | |
| Page | 4,300 | | 6.44 | |
| Payson | 4,982 | | 21.16 | |
| Phoenix | 1,058 | | 7.46 | |
| Prescott | 5,400 | | 18.78 | |
| Quartzite | 870 | | 4.98 | |
| Safford | 2,844 | | 9.02 | |
| Sedona | 4,500 | | 17.85 | |
| St. Johns | 5,730 | | 11.09 | |
| Tombstone | 4,540 | | 13.83 | |
| Tucson | 2,410 | | 11.15 | |
| Willcox | 4,182 | | 12.18 | |
| Winslow | 4,880 | | 7.63 | |
| Yuma | 138 | | 2.99 | |

Western Regional Climate Center, wrcc@dri.edu

# Average Annual Rainfall and Elevations of Arizona Cities
## Answer Key

| Name of City | Elevation (in feet) | Elevation (rounded to the nearest hundred) | Annual Average Precipitation (in inches) | Precipitation (rounded to nearest whole number) |
|---|---|---|---|---|
| Ajo | 1,798 | 1800 | 8.37 | 8 |
| Casa Grande | 1,398 | 1400 | 8.35 | 8 |
| Cottonwood | 3,320 | 3300 | 11.67 | 12 |
| Douglas | 3,990 | 4000 | 13.44 | 13 |
| Flagstaff | 7,000 | 7000 | 22.31 | 22 |
| Gila Bend | 735 | 700 | 6.02 | 6 |
| Globe | 3,500 | 3500 | 15.90 | 16 |
| Kingman | 3,345 | 3300 | 10.32 | 10 |
| Lake Havasu City | 575 | 600 | 4.57 | 5 |
| Nogales | 3,865 | 3900 | 16.02 | 16 |
| Page | 4,300 | 4300 | 6.44 | 6 |
| Payson | 4,982 | 5000 | 21.16 | 21 |
| Phoenix | 1,058 | 1100 | 7.46 | 8 |
| Prescott | 5,400 | 5400 | 18.78 | 19 |
| Quartzite | 870 | 900 | 4.98 | 5 |
| Safford | 2,844 | 2900 | 9.02 | 9 |
| Sedona | 4,500 | 4500 | 17.85 | 18 |
| St. Johns | 5,730 | 5700 | 11.09 | 11 |
| Tombstone | 4,540 | 4500 | 13.83 | 14 |
| Tucson | 2,410 | 2400 | 11.15 | 11 |
| Willcox | 4,182 | 4200 | 12.18 | 12 |
| Winslow | 4,880 | 4900 | 7.63 | 8 |
| Yuma | 138 | 100 | 2.99 | 3 |

## Precipitation & Elevation



Precipitation (in inches) vs. Elevation (in feet)

## Elevation and Precipitation of Arizona Cities



Precipitation in Inches

Elevation in Feet

Name _____

# Raindrops Quiz

Use your scatter plot, your chart of precipitation and elevations, and your map of Arizona Cities to answer the following questions.

1.  The scatter plot of Precipitation and Elevations of Arizona Cites shows a
    A. negative trend      B. positive trend      C. no trend    D. none of these

2.  Parker is a small town located on the western Arizona border between Quartzite and Lake Havasu City. Parker probably gets an average annual precipitation of
    A. more than 20 inches   B. about 10 inches      C. 0 inches      D. about inches

3.  Seattle has an annual average precipitation of 37.57 inches. If you rounded this amount to the nearest whole number, you would get
    A. 38 inches                          B. 37 inches
    C. 35 inches                          D. 375 inches

4.  Two cities which receive some of highest precipitation for Arizona cities are
    A. Phoenix and Tucson.           B. Nogales and Douglas.
    C. Prescott and Cottonwood.      D. Flagstaff and Payson.

5.  The top of Mt. Lemmon near Tucson has an elevation of about 9000 feet. Based on your scatter plot, what would you expect the annual average precipitation to be there?
    A. about 15 inches                   B. more than 60 inches
    C. about 30 inches                   D. not enough information given

6.  The cities with the least amount of precipitation in Arizona are located in the
    A. northern part of the state.       B. southern part of the state.
    C. southeastern part of the state.   D. southwestern part of the state.

7.  A scatter plot is a useful graph for showing
    A. if there is a correlation between two sets of data
    B. change over time
    C. percents
    D. the range and median of a set of data

8.  One definition of a desert is that it is a place with less than 10 inches of rainfall per year. If this were true, how many of the cities on your map are located in the desert?
    A. 15           B. 3           C. 10           D. 5

9.  The average number of days of precipitation in Arizona varies from a high of 70 days to a low of 15 days. Which two cities would be most likely to hold the record for the high and low number of days of precipitation?
    A. Phoenix and Tucson            B. Flagstaff and Yuma
    C. Nogales and Douglas           D. Yuma and Quartzite

10. The scatter plot below shows the elevation and populations of some cities in Arizona. Which term best describes the trend shown?

**Elevation & Population**
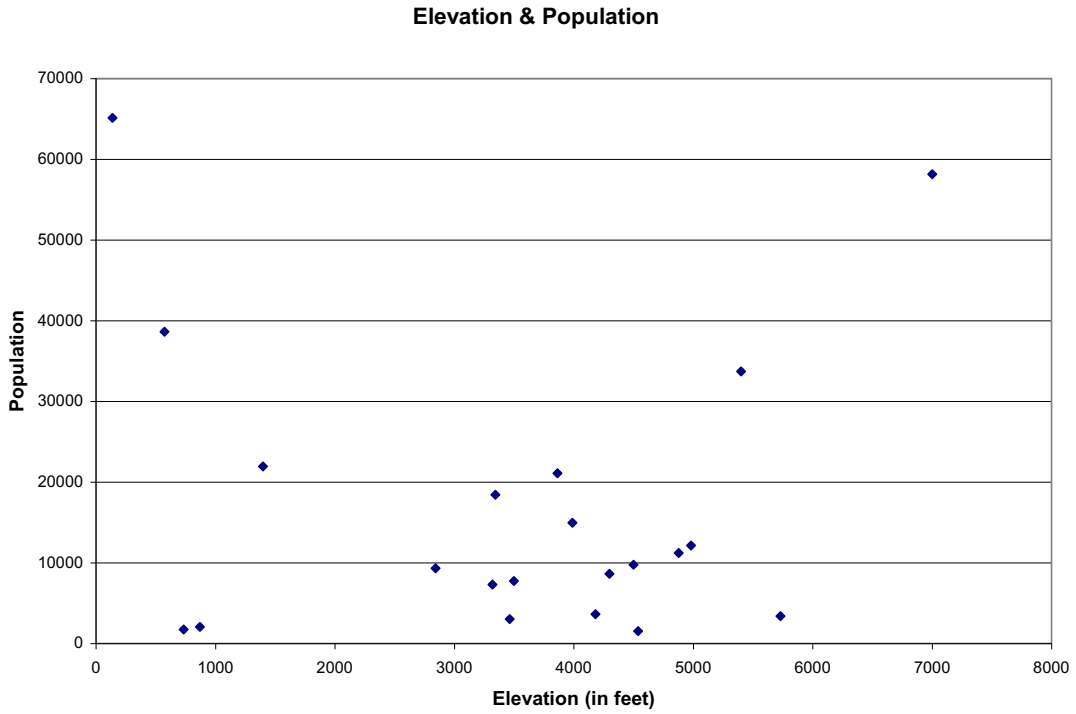


A. Positive
C. Negative

B. Frequent
D. No trend

# Answer Key to Raindrops Quiz

1.  B (math)

2.  D (geography)

3.  A (math)

4.  D (geography)

5.  C (math)

6.  D (geography)

7.  A (math)

8.  C (geography)

9.  B (geography)

10. D (math)

# Scatter Plot Samples

## Positive Correlation

A positive correlation between two sets of data means that as the values in one set of data increase, the values in the second set of data also increase. On a graph, this is shown by a set of points moving from the lower left corner towards the upper right corner. The graph below shows that as the number of people infected with HIV increase, so does the number of cases of AIDS.

**HIV & AIDS**
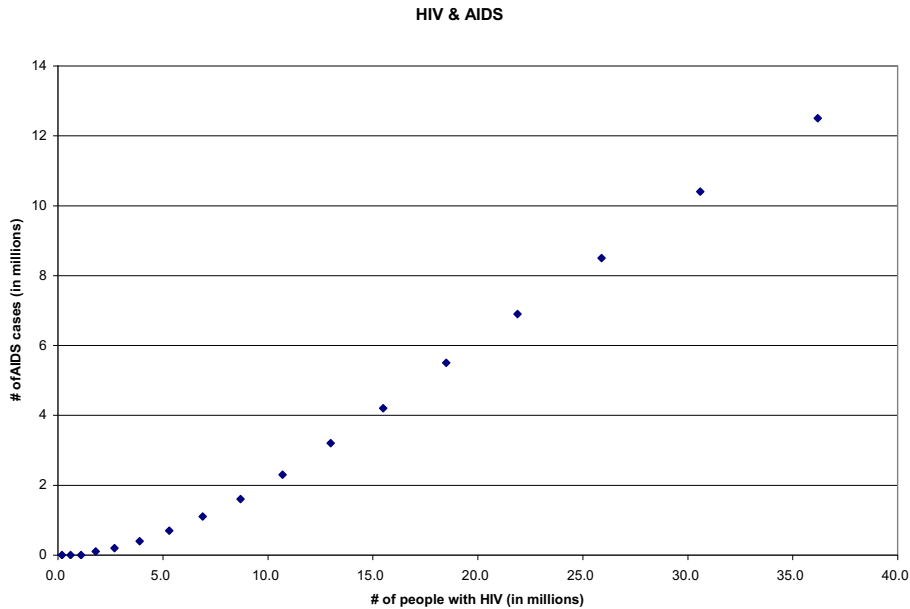


Another positive correlation is shown below in the graph of global temperatures. As the years increase, the mean temperature of the globe also increases.

**Global Temperatures**
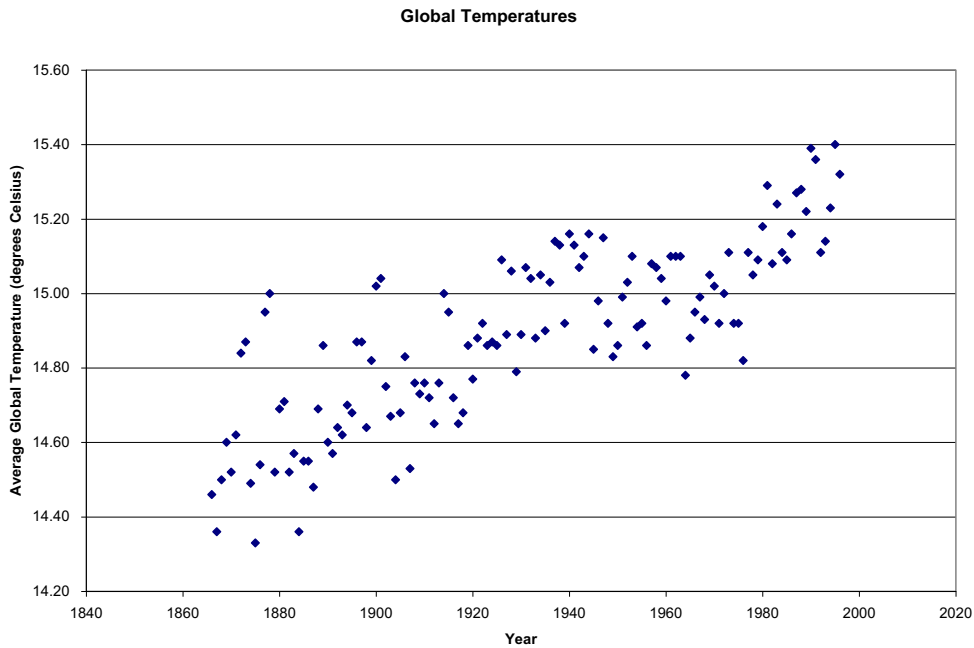
**Negative Correlations**
A negative correlation means that as the values in one set of data increases, the values of the second set of data decreases. This is shown in the chart below about car repairs and oil changes. As the number of oil changes per year increases, the cost of car repairs decreases.

**Oil Changes and Engine Repair**
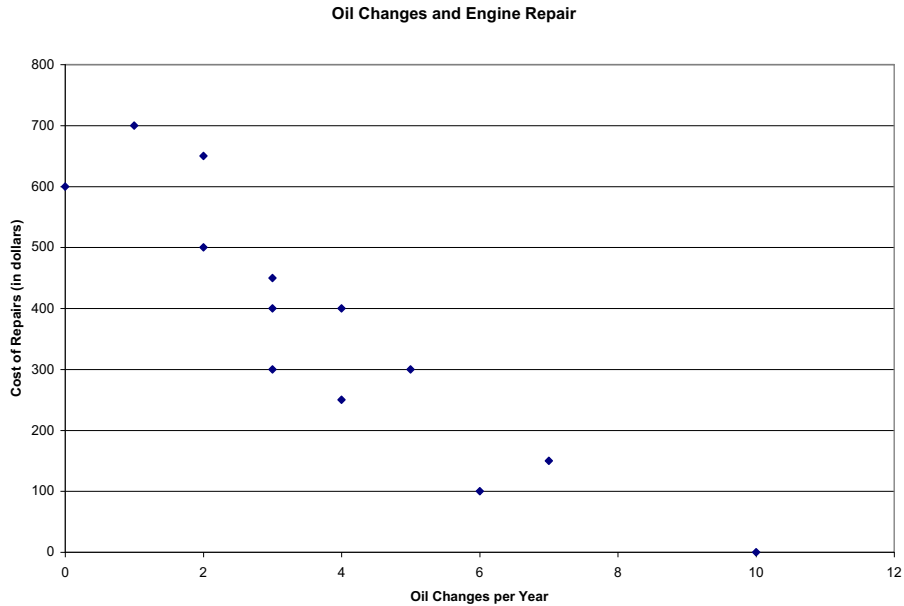


Another negative correlation is shown in the chart below of winning times in the Women's Olympic Freestyle Swim. Each year the winning time decreases.

**Winning Times for the Women's Olympic 400-Meter Freestyle Swim**



ARIZONA
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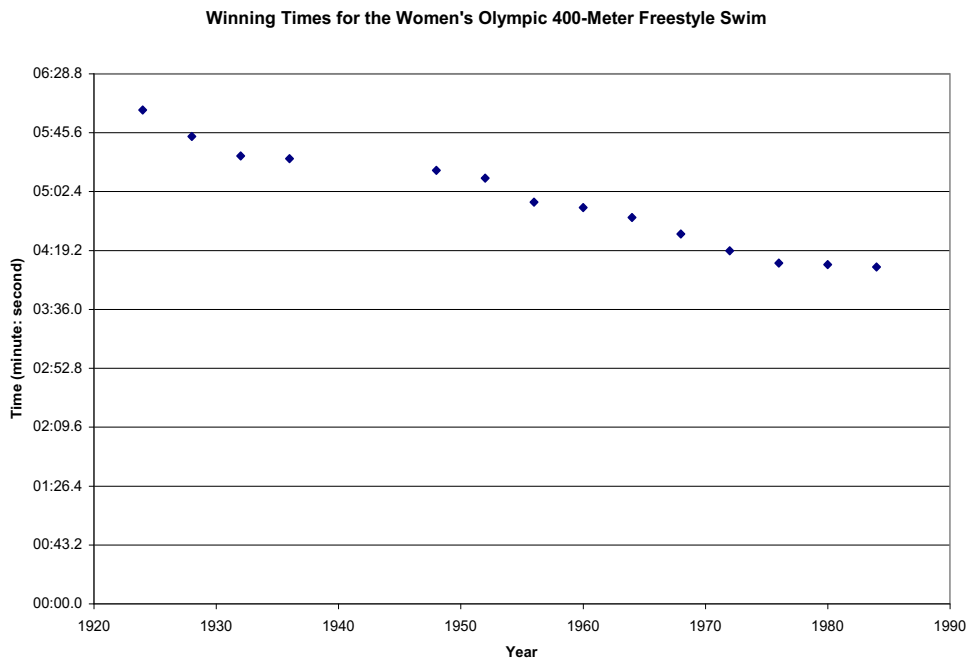
**No Trend**
Sometimes two sets of data are not related to each other. The points on the graph will show no trend and
will be randomly scattered as in the graph below showing annual average precipitation and population of
selected western states. Arizona and Washington have similar populations but very different amounts of
precipitation.



Arizona a        **Precipitation & Population**        Washington