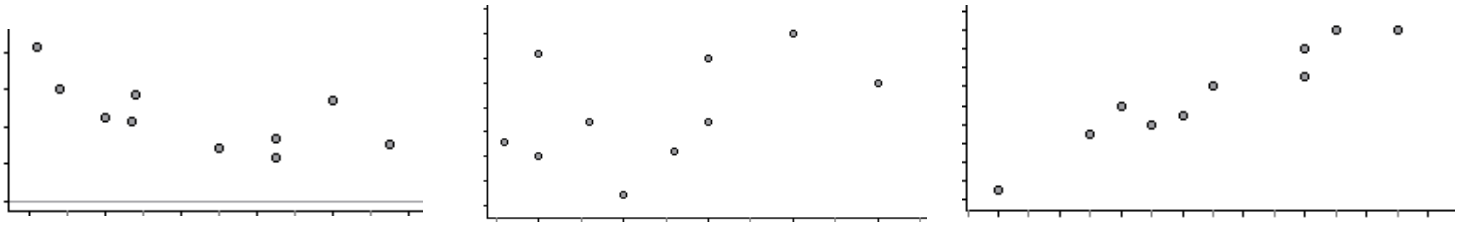
Developing an intuitive sense of form, direction, and strength of the relationship between two measurements

1. Match each set of measurements to a scatterplot. Briefly explain your reasoning.

Scatterplot 1 *Scatterplot 2* *Scatterplot 3*

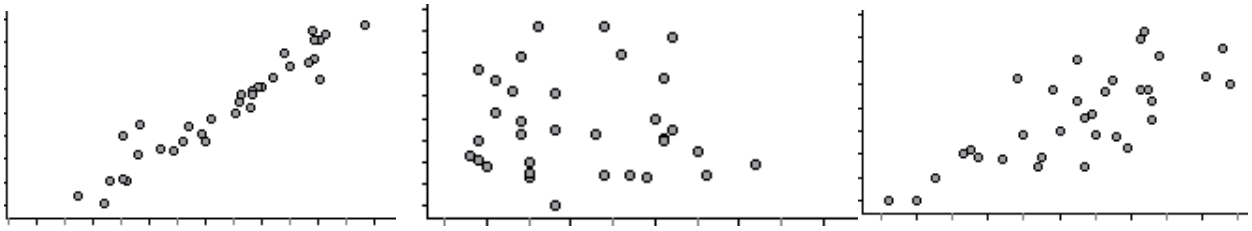


A. x = city miles per gallons and y = highway miles per gallon for 10 cars
B. x = sodium (mg/serving) and y = Consumer Report quality rating for 10 salted peanut butters
C. x = price ($) and y = Consumer Report quality rating for 10 bicycle helmets

2. For each of the scatterplots in (1) describe what a dot represents.

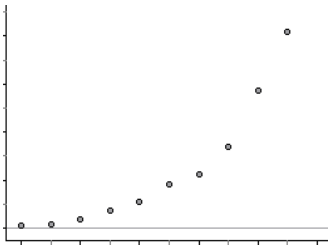
3. These scatterplots show body measurements for 34 of adults who are physically active. Some measurements are a "girth" which is a measure of length around a body part. Match each description to a scatterplot. Briefly explain your reasoning.
   A. x = forearm girth (cm), y = bicep girth (cm)
   B. x = calf girth (cm), y = bicep girth (cm)
   C. x = age (years), y = bicep girth (cm)

Scatterplot 1 *Scatterplot 2* *Scatterplot 3*

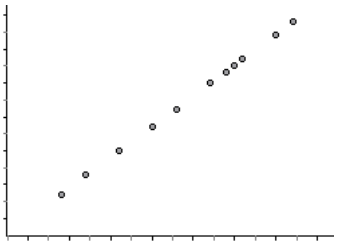


4. Match each set of measurements to a scatterplot. Briefly explain your reasoning.

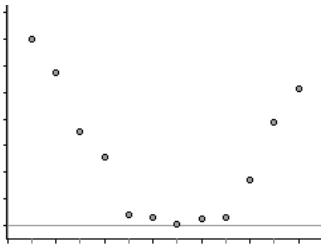
Scatterplot 1



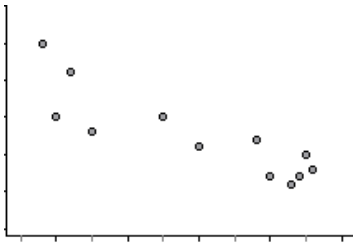
Scatterplot 2



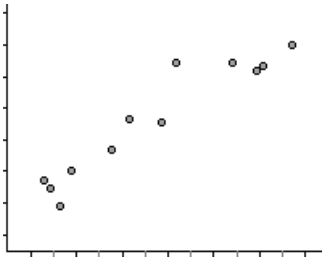
Scatterplot 3



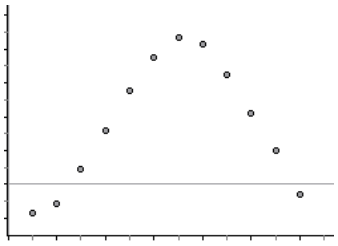
Scatterplot 4



Scatterplot 5



Scatterplot 6



A. x = month number (January = 1) and y = rainfall (inches) in Napa CA. Napa has several months of drought each summer.
B. x = month number (January = 1) and y = average temperature in Boston MA. Boston has cold winters and hot summers.
C. x = year (from 1970) in 5-year increments and y = Medicare expenditures ($). The yearly increase in Medicare costs has been getting bigger over time. Costs are predicted for 2015.
D. x = average temperature (°C) and y = average temperature (°F) each month in San Francisco
E. x = chest girth (cm) and y = shoulder girth (cm) for a sample of men.
F. x = engine displacement (in liters) and y = city miles per gallon for a sample of cars. Engine displacement is roughly a measurement of the size of the engine. Large engines use more gas.

5. What does a dot represent in each of the scatterplots in (4)?