

1. Knowledge of high school algebra is a prerequisite for this course. Without using a calculator, solve the following equations for X.

a) $3 + 5X = 15$

d) $\frac{(X - a)}{b} = Z$

b) $mX + b = Y$

e) $X^2 = 16$

c) $\frac{(X - 4)}{3} = 7$

f) $\sqrt{X} = 9$

2. Familiarity with the use of a calculator will be helpful in this course. Use your calculator to perform the following operations. Leave answers in decimal form.

a) $\frac{(2 + 4 + 1 + 6 + 7)}{5} =$

b) $(2 - 4)^2 + (4 - 4)^2 + (1 - 4)^2 + (6 - 4)^2 + (7 - 4)^2 =$

c) $\sqrt{\frac{26}{4}} =$

d) $\frac{1}{16} + \frac{1}{20} =$

e) $4 + 2.776\left(\frac{2.55}{\sqrt{5}}\right)$

3. Statistics uses the language of summation notation to build statistical formulas. You will need to learn how to use your calculator to accomplish the calculations indicated by summation notation. Most calculators have built in statistics functions to do the calculations. For this problem, you may work with others who have the same kind of calculator as you.

Let $x_1 = 2$, $x_2 = 4$, $x_3 = 1$, $x_4 = 6$, $x_5 = 7$

Use your calculator to find

$$\bar{x} = \frac{\left(\sum_{i=1}^n x_i\right)}{n}$$

$$s = \sqrt{\frac{1}{n-1} \left[\sum_{i=1}^n (x_i - \bar{x})^2 \right]}$$

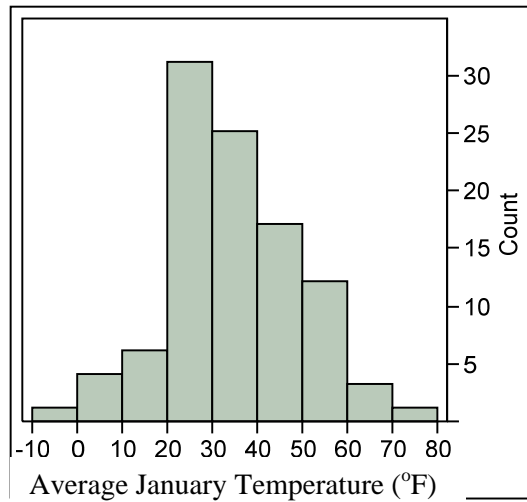
This activity is looking at what you may already know about statistics from high school or other courses at college. If you do not know the answer, that is OK. If you do not know it now, you will learn it during the course of the semester.

4. The predicted low temperatures for Ames for January 11 through 17, 2010 are:

6, 24, 19, 20, 18, 17, 20

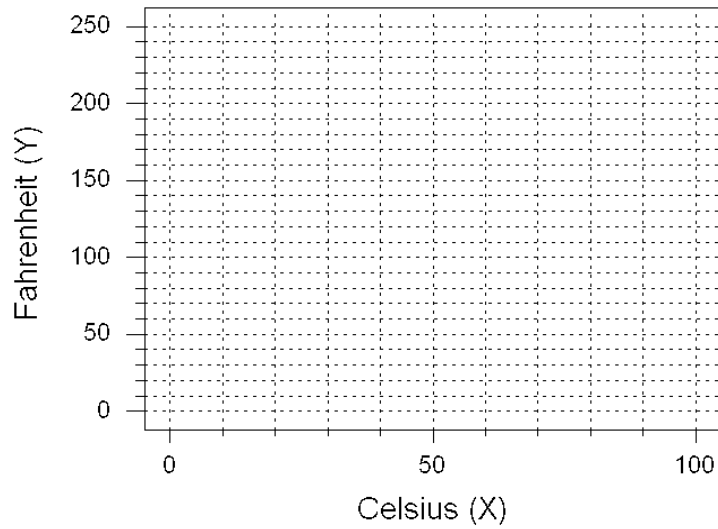
- a) What is the mean, or average, predicted low temperature for the week?
- b) What is the median predicted low temperature for the week?
- c) What is the range of the predicted low temperatures?
- d) What is the standard deviation of the predicted low temperatures?

5. Below is a histogram of the average January temperature for 100 cities in the U.S.



- a) Describe the histogram and tell me what it indicates about the average January temperature.

6. Temperatures in the U.S. are reported in degrees Fahrenheit. Degrees Celsius are common in the rest of the world.



- a. On the graph, plot the two points: 0 Celsius = 32 Fahrenheit
100 Celsius = 212 Fahrenheit.
Connect the two points with a straight line.
- b. Calculate the slope of the straight line you drew in a).
- c. What is the Y-intercept for the line you drew in a)?
- d. Fill in the blanks to get the equation of the straight line that relates Celsius to Fahrenheit.

$$F = \underline{\hspace{2cm}} * C + \underline{\hspace{2cm}}$$

- e. What is the equation that relates Fahrenheit to Celsius?

$$C = \underline{\hspace{4cm}}$$