



### Problem 1 – Chirps in 15 Seconds vs. Temperature

Read page 1.2. Look at the data of temperature (in °F) and the number of cricket chirps in 15 seconds on page 1.3. Is it easy to see a relationship between chirps and temperature by only looking at the data?

- Move points *A* and *B* on page 1.5 to draw a line of best fit. Record the points of this line that pass between most of the data.
- Using these points, write an equation for this line.

On page 1.7, plot your function in **f1(x)** to verify that it passes through the graph.

- Using your equation, how many chirps in 15 seconds would you expect to hear if the temperature was 100°F? How many chirps for 55°F?

### Problem 2 – Olympic High Jump

Read the problem on page 2.1.

- By only looking at the data of high jump height for each year on page 2.2, can you see a general trend?
- Move points *A* and *B* on page 2.4 to approximate a line of best fit. Record the value of your points and show your work by writing the equation of the line.
- Graph this equation in the *Data & Statistics* application on page 2.7 using **MENU > Analyze > Plot function**. Use your **f1(x)** to predict the height of the high jump for the 2012 Olympics.
- Looking back at the data since 1988 on page 2.2, does your prediction for the 2012 games seem realistic and reasonable? Why or why not?

### Problem 3 – Brain Size and IQ

- By looking at the graph titled Brain Size vs. IQ, does there appear to be a relationship between brain size and IQ? Change the variables on the axis. Does a relationship appear?

**Extension****Problem 1 – Women’s Olympic Discus Throw**

- Find the equation of the line of best fit. Make a prediction for a future Olympic year and discuss how reasonable it is.

**Problem 2 – How Many Handshakes?**

- Draw on your paper what this would look like if there were 5 people in the room. How many handshakes would there be if there were 6 people?

- Does this data look linear? What is the shape of this graph?