*EXPLORATIONS*

Appendix

Basic Geoboard Procedures

This section provides instructions for basic Geoboard operations that you should understand in order to complete the activities in this book.

Drawing an object

A Geoboard object can be a line segment or a closed polygon. You can create as many as six objects on a board, provided you do not exceed a maximum of 26 total vertices per board.

1. Select **DRAW** (press the ⍈ key). The commands change to drawing commands, **ADD**, **DEL**, **DONE**, and **QUIT**.

2. Press ▲ repeatedly to move the cursor to the top row.

3. Select **ADD** to add a point at the cursor position.

4. Press ▶ ▶ ▶. As the cursor moves, it leaves a dotted line to show the new portions of the object that you are drawing.

5. Select **ADD** to add a second point. The dotted line becomes solid.

6. Press ▼ ▼ ▼, and then select **ADD** to add a third point. You now have a triangle.

7. Press ◀, and then select **ADD** to add a fourth point.

8. Select **DONE**. Your four-sided object looks like this:
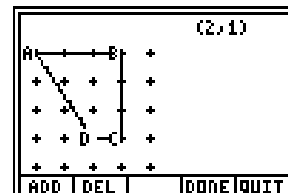
9. Select **QUIT**. The main Geoboard commands reappear.

Displaying coordinates and vertex labels

1. Select **FMAT** (press the ZOOM key). The FORMAT menu appears.

2. Press ◄, ►, ▼, and ▲ as necessary to highlight **LblsOn**, and then press the ENTER key.

3. Press ◄, ►, ▼, and ▲ as necessary to highlight **CoordOn**, and then press the ENTER key.

4. Select **QUIT**. The board reappears. The cursor coordinates are shown, and the vertices of objects that you draw will have alphabetic labels.

Note: *Geoboard creates unique labels for the vertex points of each object. Even if vertex points of different objects share a common peg, each vertex point has its own label.*

Measuring and storing the perimeter

1. Select **MEAS** (press the TRACE key). The MEASUREMENT menu appears.

2. Select **Perimeter**. The board reappears with the **Perimtr** prompt.

3. If the cursor is not already on one of the object's defined vertices, use the arrow keys to move the cursor to a defined vertex.

4. Press the ENTER key. The object's perimeter, **10.606**, appears, and the Geoboard commands change to let you store the measured value.
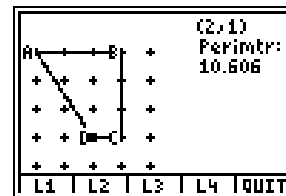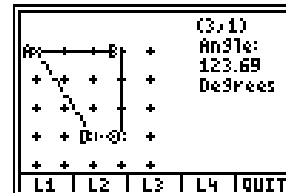
5. Select **L1** to store the value in the TI-73's **L1** list. The main Geoboard commands reappear.

Measuring and storing angle ADC

1. Select **MEAS** (press the TRACE key), and then select **Angle**. The board reappears with the **Angle** prompt.

2. Move the cursor to point **A**, and then press the ENTER key. The point is marked with an **×**.

3. Move the cursor to point **D**, and then press the ENTER key. The point is marked with an **×**.

4. Move the cursor to point **C**, and then press the ENTER key. The angle, **123.69**, appears, and the angle is shown as a dotted line on the object.

5. Select **L2** to store the value in the TI-73's **L2** list. The main Geoboard commands reappear.

Quitting the Geoboard Application

Quitting the application or turning off the TI-73 does not remove Geoboard from the Flash memory. To remove it, refer to *Removing Geoboard* in the User Guide.

1. Press [2nd] [QUIT]. The message **Exit this board?** appears.

2. Select **YES**. If you have made changes that you have not saved, the message **Save this board?** appears.

   ♦ Select **YES** if you want to save the board. Follow the prompts to select a name for the board.

   ♦ Select **NO** if you want to quit without saving.

3. When the main Geoboard menu appears, press [▶] [▶] [▶] to display the QUIT menu.

4. Select **YES**. The TI–73 home screen appears.

Deleting a point while drawing an object

You can remove points on an object while drawing it, starting with the most recently added point.

1. While creating an object, select **DEL** (press the [WINDOW] key). The last point that you added is removed, and the object's outline is redrawn.

2. Resume adding points until you have completed the object.

Deleting an object

Make sure you are not currently creating an object. You should see the main Geoboard commands (**DRAW**, **TFRM**, and so on).

1. Use the cursor keys ([▲], [▼], [◀], and [▶]) to move the cursor to any vertex on the object that you want to remove.

2. Press the [DEL] key. The object is shown with a dotted line, and the message **Delete - Are You Sure?** appears.

*Note: If you have selected a point that is shared by two or more objects, the message **Select Object** appears. Press [▲] as necessary to select the object that you want to remove.*

Measuring the length of a line segment

1. Select **MEAS** (press the [TRACE] key). The MEASUREMENT menu appears.

2. Select **Length**. The board reappears with the **Length** prompt.

3. Use the cursor keys ([▲], [▼], [◀], and [▶]) to move to either of the two points that form the line segment, and press the [ENTER] key.

4. Move the cursor to the other point, and press the [ENTER] key. The length value appears, and commands appear for storing the value in a list.

Note: If a value does not appear, you might have selected a peg that is not one of the object's vector points. Make sure you are measuring a line segment that was defined as part of the object.

5. Select the TI-73 list in which you want to store the value, or select **QUIT** to discard the value. The main Geoboard commands reappear.

6. Press [CLEAR] [CLEAR] to stop measuring.

Measuring an object's area

You can measure the area of any closed polygon that has no intersecting lines.

1. Select **MEAS** (press the [TRACE] key). The MEASUREMENT menu appears.

2. Select **Area**. The board reappears with the **Area** prompt.

3. Use the cursor keys ([▲], [▼], [◄], and [►]) to move to any vertex on the object, and press the [ENTER] key. The area value appears.

Note: If you have drawn multiple objects on the board, select a point that is unique to the object that you want to measure. If you select a shared point instead, you must use the [▲] key to select the object before pressing [ENTER].

4. Select the TI-73 list in which you want to store the area value, or select **QUIT** to discard the value. The main Geoboard commands reappear.

5. Press [CLEAR] [CLEAR] to stop measuring.

Measuring an object's perimeter

You can measure the perimeter of any closed polygon that has no intersecting lines.

1. Select **MEAS** (press the [TRACE] key). The MEASUREMENT menu appears.

2. Select **Perimeter**. The board reappears with the **Perimtr** prompt.

3. Use the cursor keys ([▲], [▼], [◄], and [►]) to move to any vertex on the object, and press the [ENTER] key. The perimeter appears.

4. Select the TI-73 list in which you want to store the perimeter value, or select **QUIT** to discard the value. The main Geoboard commands reappear.

Note: If you have drawn multiple objects on the board, select a point that is unique to the object that you want to measure. If you select a shared point instead, you must use the [▲] key to select the object before pressing [ENTER].

5. Press [CLEAR] [CLEAR] to stop measuring.