

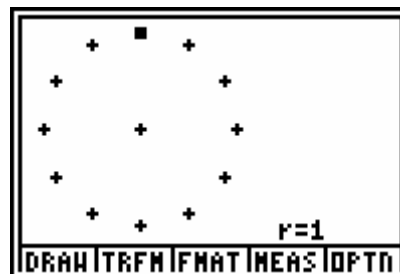


7TH GRADE TI-73 ACTIVITY 32: PI TIME!

ACTIVITY OVERVIEW:

In this activity we will

- Use the GEOBOARD app on the TI-73 to draw circles and understand where PI comes from
- Utilize Lists in the calculator to find ratios

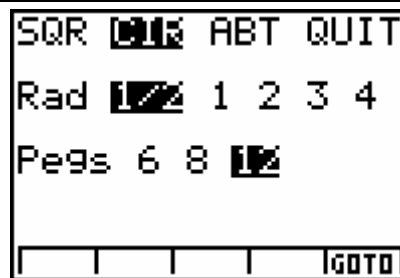


Using the Geoboard application, we will draw circles and measure the circumference and diameter of each circle and then compare the relationship of each pair.

First, clear lists 1 and 2 in your calculator. Press $\text{2nd}[\text{STAT}], \blacktriangleright$ to OPS and select **3:ClrList** and press ENTER . Press $\text{2nd}[\text{STAT}][1]$, press , and then press $\text{2nd} [\text{stat } 2]$. then press ENTER .

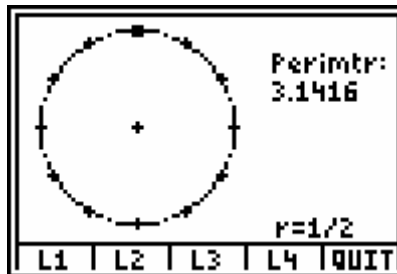


Press the APPS key on your TI-73 and arrow to GEOBOARD. Press ENTER . Press the right arrow to go to the circle menu. Arrow down to select **1/2** radius and select **12** pegs. Your screen should look like the one on the right. Press the key below the GOTO softkey.

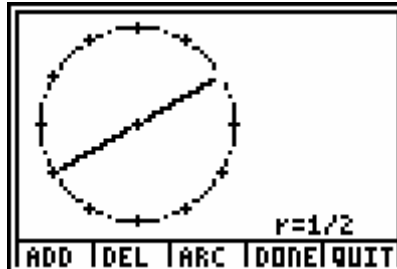


In order to draw the circle press the key below the draw softkey, then press the **add** key and press the \blacktriangleright key until you reach the last peg before your starting place. Press **arc**. Press add again and go one more place to the right to complete the circle. Press **arc** again and then **done**. Then press **quit**.

Press **meas**, select **Perimeter** and press **ENTER** and press **ENTER** again. Your screen should look like the one on the right. Press the key below L1 to record the measurement in List 1. Press **quit**.

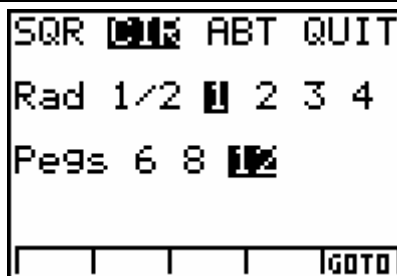


Now draw a diameter in the circle. Press **draw** and then **add**. Press the right arrow key until your chord forms a diameter. Press **add** again and then press **done**. Press **quit**.



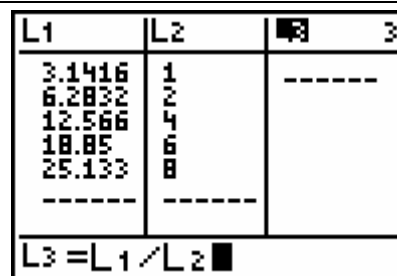
To measure the diameter, press the key under the **meas** softkey. Select Length and then select the two endpoints of the diameter by pressing **ENTER** on each one. Then press the key below L2 to store the length in L2.

Repeat the process for radius lengths of 1,2,3 and 4. To draw a new circle, press **option**, select 1:main menu, select Yes for Exit board and select NO on save board. You can now arrow down and change the radius to. See the screen on the right.



Once you have collected all of the data, go to the main menu and select quit to exit the application.

To use the data collected in the Lists, press the **LIST** key. Arrow to the top of L3 and type in **2nd**L1 \div **2nd**L2. We will divide the lists to see if there is a constant relationship between the diameter and circumference.



What number results from the divisions? _____
This number is the ratio of the circumference compared to the diameter. It is also the relationship for all circles. It is the number you call PI!

EXTENSION

If you measured the radius for each circle instead of the diameter, how could you test the same relationship? Do you see a relationship between PI and the new ratio you get from the radius and the circumference?