


# Circumference & Area of Circles

## Student Worksheet

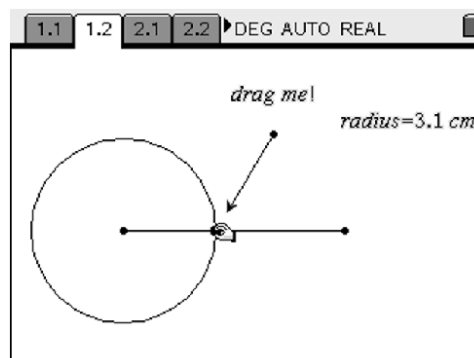
Name \_\_\_\_\_

In this activity, you will explore relationships among diameter, circumference, radius and area of circles.

1. Open the *CircumfArea.tns* document, and advance to page 1.2.

- Press **ctrl**  to grab the radius point.
- Drag it to make the radius larger or smaller.

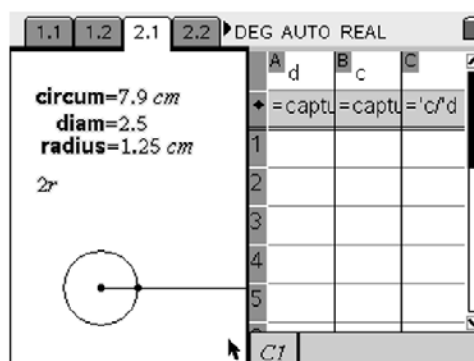
What do you notice?



2. Advance to page 2.1. Press **ctrl** **tab** to move between panes of the split screen.

- The left side of the split screen has several values displayed.
- The right side split screen has a spreadsheet to gather the data from the geometric object.

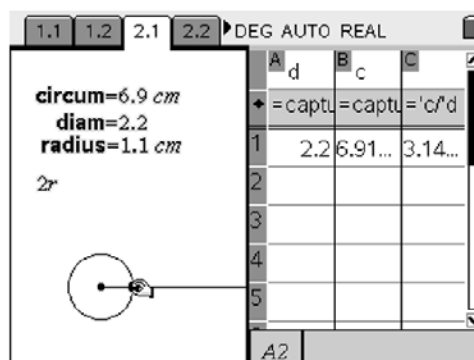
What happens to the radius and circumference values as the radius point is dragged?



3. Collect data.

- Move to the geometric work space and drag the radius point to a desired size.
- Press **ctrl** **.** to capture the current data.
- Drag the radius to a new position and capture the data.
- Repeat to gather several data points.

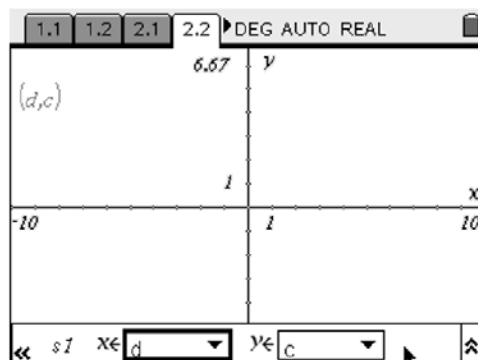
What do you observe about column C?



## 4. Move to page 2.2 to graph the data.

- Press **[menu]** and select Graph Type > Scatter Plot.
- Press **[var]** to select each variable; press **[tab]** to move to the next field. Then press **[enter]** to graph.
- Select Menu > Window > Window Settings or Menu > Window > Zoom – Fit.

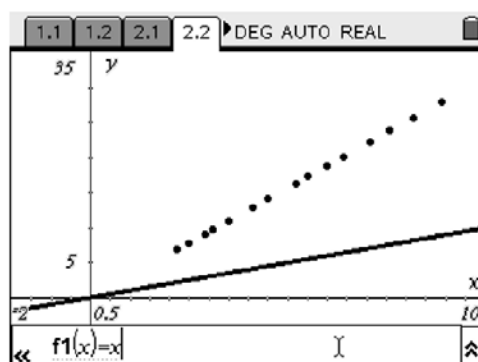
What type of curve would be a good fit for the plotted points?



## 5. Fit a line to model the plotted points

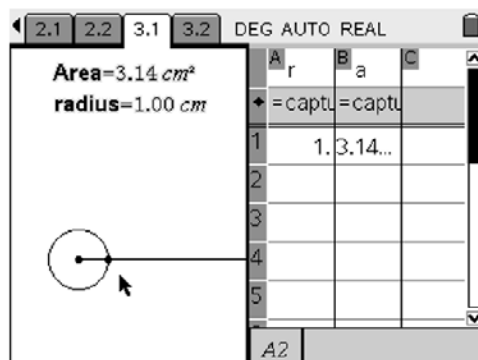
- Press **[menu]** and select Graph Type > Function. Type  $x$ , then press **[enter]** to graph the line.
- Move the cursor to the right side of the line until a rotate cursor appears. Click and drag the line to get a good fit.
- “Right-click” on the line by pressing **[ctrl]** **[menu]**. Select Label to display the function.

What does the slope of the line represent?



## 6. Advance to page 3.1 to explore radius and area.

- This data collection is set up to be automatic. Data is collected as soon as the radius point is dragged.



## 7. The data is plotted on page 3.2.

- What type of curve will model the data?
- Press **[menu]** and select Graph Type > Function. Type  $x^2$  and press **[enter]**.
- Move the cursor to the side of the parabola until a two-sided arrow appears. Click and drag to get a good fit.

