

Name _____

Date _____

EXPLORATIONS

Activity 16

Radius, Diameter, and Circumference of a Circle

Construct the geometric object by following the instructions below, and then answer the questions about the object.

1. Construct a circle.
 - a. From the Circle Toolbar, select **Circle**.
 - b. Click on the screen where you want the center of the circle.
 - c. Drag to create the circle.
 - d. Click when the circle is the desired size.
2. Create the radius of the circle.
 - a. From the Lines Toolbar, select **Segment**.
 - b. Move the cursor toward circle until the message **On the circle** appears and click.
 - c. Click on the center of the circle.
 - d. Label the radius AB .
3. Create a diameter of the circle.
 - a. From the Lines Toolbar, select **Line**.
 - b. Move the cursor toward the circle until the message **On this circle** appears. Click once.
 - c. Move the cursor to the center of the circle and click again.
 - d. From the Points Toolbar, select **Intersection Point**.
 - e. Create the point of intersection of the line and circle.
 - f. From the Lines Toolbar, select **Segment**.
 - g. Construct a segment over the line extending from one point on the circle to the other point on the circle. Label the segment XY .
 - h. From the Display Toolbar, select **Hide/Show**.

- i. To hide the line, click on the line outside of the circle.

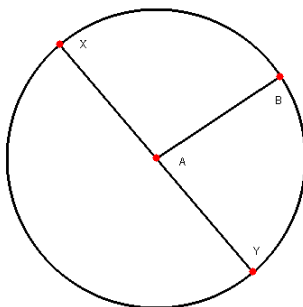


Figure 16.1

4. Measure the length of the radius and the diameter. Record the measurements in the table in #5.
5. Alter the circle three more times and record the results.

| Radius | Diameter |
|--------|----------|
| | |
| | |
| | |
| | |

6. How does the radius compare in length to the diameter?

7. From the Measure Toolbar, select **Distance And Length**.
8. Move the cursor toward the circle until the message **Circumference of this circle** appears. Click once.
9. Label this **circumference =** .
10. From the Measure Toolbar, select **Calculate**.
 - a. Click on the value of the circumference.
 - b. Click on \div .
 - c. Click on the value of the diameter.
 - d. Double-click on the result and drag this onto the screen.

11. Record the results in the table below. Change the circle three times and record those results.

| Circumference | Diameter | Result |
|---------------|----------|--------|
| | | |
| | | |
| | | |
| | | |

12. What Greek symbol does the number in the result column represent?

13. Define π in terms of circumference and diameter.

14. Define circumference in terms of diameter.

15. Define circumference in terms of radius.
