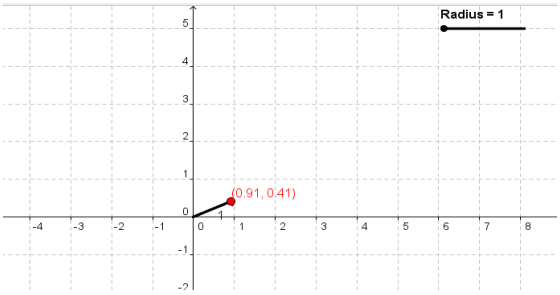
Student Activity on Circles with Centre (0,0) 1

Use in connection with the interactive file "Circles with Centre (0,0) 1" on the Student's CD.

To explore the relationship between the equation of a circle, the circle's radius, and points on the circle. Then draw (some) circles of the form $x^2+y^2=r^2$



The slider called "Step" is used to change the information on the screen.

To start set the slider to "Step = 1"

1. The red dot is at a fixed distance of 1 unit from the point (0,0). Drag the red dot.

What shape is formed?_____

2. Change the radius of the circle to 2 by using the Radius slider. Drag the red dot again. Write down four points on the circle (with whole number coordinates)._____

_____

3. Change the radius of the circle to 4 by using the Radius slider. Drag the red dot again. Write down four points on the circle (with whole number coordinates)._____

_____

4. Move the "Step" slider to 2. Adjust the Radius slider. What do you notice about the equation of the circle as the radius gets bigger?_____

_____

5. What do you notice about the equation of the circle as the radius gets smaller?_____

_____

6. $(1)^2=1$, $(2)^2=4$, $(3)^2=9$. The numbers 1, 4 and 9 are all square numbers. Write down the first 10 square numbers._____

_____

7. When the radius is 3, what is the equation of the circle?_____

8. When the radius is 4, what is the equation of the circle?_____

9. When the radius is 5, what is the equation of the circle?_____

10. Write down the relationship between the radius of a circle and its equation._____

_____

_____

11. A circle with centre (0,0) has a radius of 7. What is its equation?_____

12. A circle has centre (0,0) and a radius of 7. Write down 4 points on the circle_____

_____

13. Sketch the circle that has centre (0,0) and a radius of 7. Clearly label the points where it crosses the x-axis and y-axis

Move the "Step" slider along and complete the questions that are asked.

You could now try “Drawing Circles Quiz 1” which is also on this CD/Website