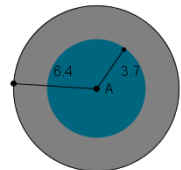


Student Activity: To investigate the area of a circular pond and surrounding path

Use in connection with the interactive file, 'Circle Pond', on the Student's CD.

Blue = the lake
Grey = the path



Inner radius = 3.7 path = 2.7

Move sliders to change size of lake and size of path

Click to get area of inner circle

Click to see the area of the outer circle

Click to see the area of the path

All measurements are in metres

- Find the area of a circle of radius 3.7 cm. Explain how you got your answer.

- A circular pond of radius 5 m is surrounded by a path of width 1 m.
 - What is the area of the pond?

- What is the area of the pond plus the path?

- What is the area of the path?

- d. Given that it costs €50 per m^2 to insert the path, how much will this path cost?

- e. If the width of the path was increased to 2 m, what effect would this have on the area of the pond plus path and consequently on the path? Explain your answer.

3. A circular garden of area $49\pi \text{ m}^2$ consists of a pond surrounded by a path of width 1 m. Find the area of the pond and the area of the path.

4. A circular garden consists of a pond of area $36\pi \text{ m}^2$ surrounded by a path of width 1m. Find the area of the pond and the area of the path.

5. A circular garden of area 78.5 m^2 consists of a pond surrounded by a path of width 1 m. Find the area of the pond and the area of the path.

6. A circular picture of area 452.16 cm^2 is surrounded by a frame of width 2 cm. Find the area of wall that this framed picture will cover.

7. When cooking a pizza of diameter 50 cm the chef overcooked it and exactly 2 cm around the circumference was inedible, what area of pizza was wasted? What percentage of the pizza was wasted?

8. A family want to extend their circular swimming pool through extending the radius by 100 cm. The current radius of the swimming pool is 6 m. Find the new area of their pool. By what percent did their swimming pool increase in size?

9. A family decides to reduce their circular flower bed whose radius is 4 m by cementing a border of width 2 m around the bed. What percentage of the bed will be lost?

10. When rolling out dough for a pizza that was originally going to have a radius of 20 cm, the chef decides to extend the radius of the circular base by 5 cm.

a. What will the percentage increase in size of the pizza be?

b. Calculate the area of the base of a rectangular box that will be required to hold the new pizza?

c. Given that the height of the box will be 8 cm, draw a labelled net of the required box.

d. Find the volume of the box.

e. Find the total surface area of the box.
