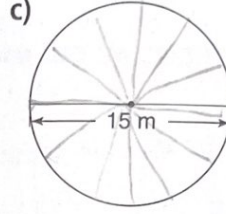
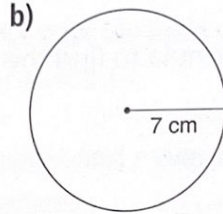
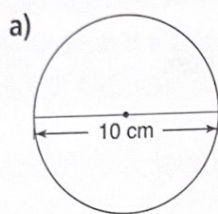


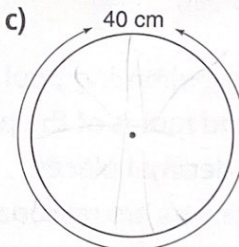
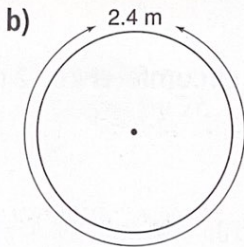
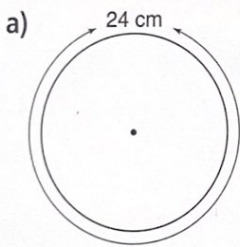
Since the circumference is approximately 3 times the diameter, the diameter is about $\frac{1}{3}$ the circumference.
 One-third of 12 m is 4 m. So, the diameter is about 4 m.
 The radius is $\frac{1}{2}$ the diameter. One-half of 4 m is 2 m.
 So, the radius of the pool is about 2 m.
 Since the calculated answers are close to the estimates, the answers are reasonable.

Practice

1. Calculate the circumference of each circle.
 Give the answers to two decimal places.
 Estimate to check the answers are reasonable.



2. Calculate the diameter and radius of each circle.
 Give the answers to two decimal places.
 Estimate to check the answers are reasonable.



3. When you estimate to check the circumference, you use 3 instead of π .
 Is the estimated circumference greater than or less than the actual circumference?
 Why do you think so?
4. A circular garden has diameter 2.4 m.
- The garden is to be enclosed with plastic edging. How much edging is needed?
 - The edging costs \$4.53/m. What is the cost to edge the garden?



5. a) Suppose you double the diameter of a circle.
What happens to the circumference?
- b) Suppose you triple the diameter of a circle.
What happens to the circumference?
- ✓ Show your work.

6. A carpenter is making a circular tabletop with circumference 4.5 m.
What is the radius of the tabletop in centimetres?

Recall: 1 m = 100 cm



7. Can you draw a circle with circumference 33 cm?
If you can, draw the circle and explain how you know its circumference is correct.
If you cannot, explain why it is not possible.

8. **Assessment Focus** A bicycle tire has a spot of wet paint on it.
The radius of the tire is 46 cm.
Every time the wheel turns, the paint marks the ground.
- a) What pattern will the paint make on the ground as the bicycle moves?
- b) How far will the bicycle have travelled between two consecutive paint marks on the ground?
- c) Assume the paint continues to mark the ground.
How many times will the paint mark the ground when the bicycle travels 1 km?
Show your work.

9. **Take It Further** Suppose a metal ring could be placed around Earth at the equator.
- a) The radius of Earth is 6378.1 km. How long is the metal ring?
- b) Suppose the length of the metal ring is increased by 1 km.
Would you be able to crawl under the ring, walk under the ring, or drive a school bus under the ring?
Explain how you know.

Reflect

What is π ?
How is it related to the circumference, diameter, and radius of a circle?