MATHEMATICS · GRADES 4-6

Introduction to circles

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you name the parts of a circle, like the radius of a wheel or the diameter of a pizza, before you work out anything about it. A circle has a handful of parts with their own names, and knowing them is what lets you talk about a wheel, a plate, or a round garden without confusion. You use these names when you measure a tyre, order a pizza by size, or work out how much fencing a round garden needs.



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Rule

The diameter is twice the radius, and the radius is half the diameter: $d = 2 \times r$ and $r = \frac{d}{2}$.

The radius runs from the centre to the edge, and the diameter runs all the way across through the centre.

The circumference is the distance all the way around a circle. It equals pi times the diameter: C = pi × d, where pi is about 3.14.

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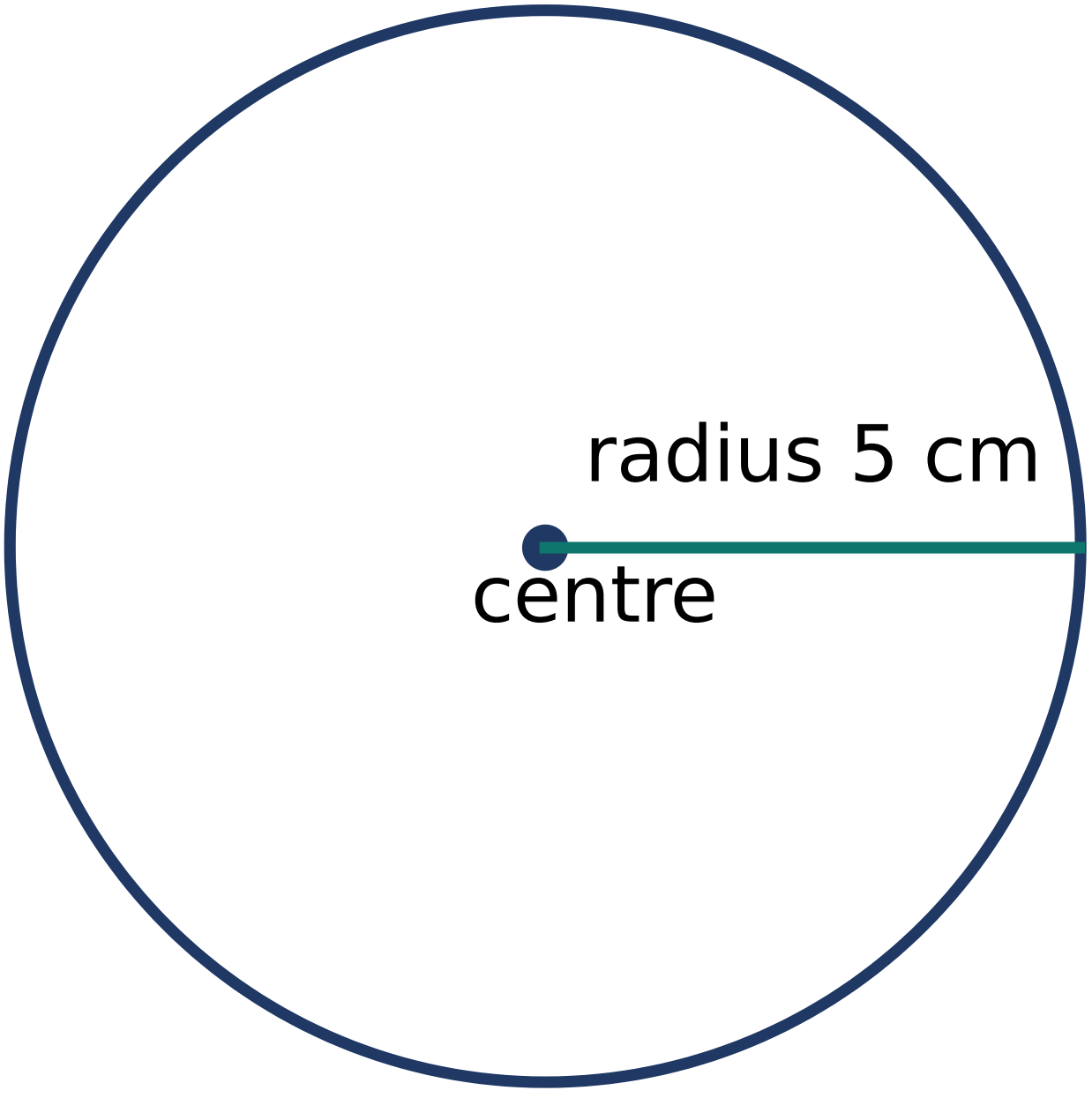
Worked examples

EXAMPLE 1

Q A circle has a radius of 5 cm. What is its diameter?



SOLUTION

This is a radius-to-diameter question, and the one rule to remember is that the diameter is twice the radius.

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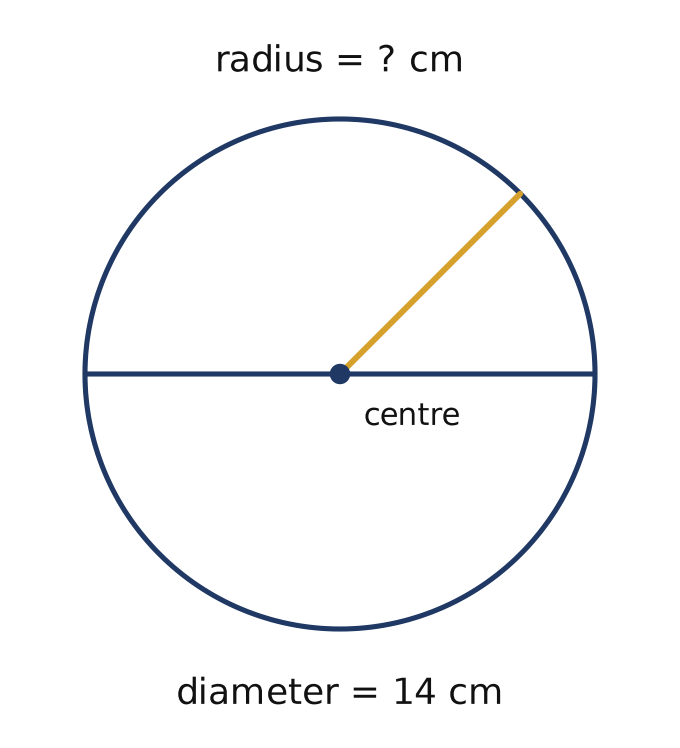
The radius is 5 cm, so the diameter is 2 x 5 cm = 10 cm.

The diameter is 10 cm. It is the line that goes all the way across the circle, through the centre.

EXAMPLE 2

Q A circle has a diameter of 14 cm. What is its radius?



SOLUTION

The radius is half the diameter.

14 cm divided by 2 is 7 cm.

The radius is 7 cm. It is the line from the centre to the edge.

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Practice questions

1. A circle has a radius of 3 cm marked. What is its diameter?

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2. A circle has a diameter of 20 cm. What is its radius?

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3. A circle has a circumference of 25.12 cm. Using pi = 3.14, what is its diameter?

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4 A circle has a circumference of 62.8 cm. Using pi = 3.14, what is its radius?

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5 A circle has a radius of 4 cm. Using pi = 3.14, what is its circumference?

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6 How many radii fit across the diameter of a circle?

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7 A circle has a radius of 5 cm. If the radius is doubled, what is the new diameter?

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8 What is the name of the line that runs all the way across a circle through the centre?

A Diameter

B Radius

C Circumference

D Centre

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9 A circle has a diameter of 10 cm. Using pi = 3.14, what is its circumference?

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10 What is the distance all the way around a circle called?

A Circumference

B Diameter

C Radius

D Centre

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ANSWER KEY

1. 6 cm

2. 10 cm

3. 8 cm

4. 10 cm

5. 25.12 cm

6. 2

7. 20 cm

8. Diameter

9. 31.4 cm

10. Circumference

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