Circumference of a circle

Understanding: Circumference of a Circle

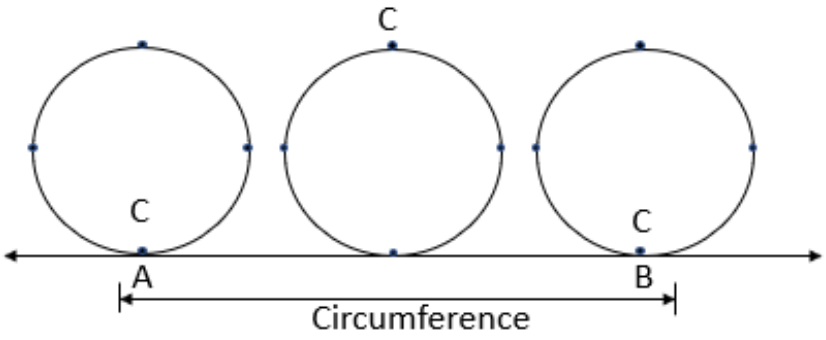
- The circumference of a circle is the distance around the circle.
- It is the perimeter of the circular shape.
- The line passing through the centre and touching both sides is called the diameter.
- The distance from the centre to any point on the circle is called the radius.

Formulas

- Circumference $= 2 \times \pi \times$ radius
- Circumference $= \pi \times$ diameter
- Use $\pi = \frac{22}{7}$ or 3.14 (as given in the question)

Important Points

- Always check whether radius or diameter is given
- If radius is given, use $2 \times \pi \times r$
- If diameter is given, use $\pi \times d$
- Units remain the same as those of radius or diameter (cm, m, etc.)



Examples with Solutions

Example: Find the circumference of a circle with radius 7 cm using $\pi = \frac{22}{7}$

Circumference $= 2 \times \frac{22}{7} \times 7 = 2 \times 22 = 44$ cm

Circumference $= 44$ cm

Example: Radius = 5 m, $\pi = 3.14$

Circumference $= 2 \times 3.14 \times 5 = 31.4$ m

Circumference = 31.4 m

Example: Diameter = 14 cm, $\pi = \frac{22}{7}$

Circumference $= \pi \times d = \frac{22}{7} \times 14 = 44$ cm

Circumference = 44 cm

Example: A circle has a diameter of 21 cm. Find the circumference using $\pi = 3.14$

Circumference $= \pi \times d = 3.14 \times 21 = 65.94$ cm

Circumference = 65.94 cm

Example: Find the circumference of a circle with radius 3.5 cm using $\pi = \frac{22}{7}$

Circumference $= 2 \times \frac{22}{7} \times 3.5 = 2 \times 11 = 22$ cm

Circumference = 22 cm

Summary Points

- Circumference is the perimeter of a circle.
- Use $2 \times \pi \times r$ or $\pi \times d$ depending on the given value.
- π is approximately $\frac{22}{7}$ or 3.14.
- Units of circumference are same as those of radius or diameter.
- Used in finding length of circular paths, wheels, and rings.