

Circles in Daily Life

ਚੱਕਰ (Circles) - ਪੀਜ਼ਾ ਦੀ ਤੁਲਨਾ, ਪਹੀਏ ਦੇ ਚੱਕਰ ਅਤੇ ਖੇਤਰਫਲ ਦਾ ਰੋਜ਼ਾਨਾ ਹਿਸਾਬ

1. Key Formulas of a Circle (ਚੱਕਰ ਦੇ ਮੁੱਖ ਫਾਰਮੂਲੇ)

From vehicle wheels and pizza deals to round park tracks, circle math plays a massive role in daily decisions.

CORE FORMULAS (ਮੁੱਖ ਫਾਰਮੂਲੇ)

$$\text{Radius (r)} = \text{Diameter (d)} / 2$$

$$\text{Circumference (C)} = 2 \times \pi \times r \text{ (or } \pi \times d)$$

$$\text{Area (A)} = \pi \times r^2$$

$$[\text{Using } \pi \approx 3.14 \text{ or } 22/7]$$

2. Real-Life Practical Scenarios

Scenario A: Pizza Value Comparison (ਪੀਜ਼ਾ ਡੀਲ ਦੀ ਤੁਲਨਾ)

Example: Which offer gives you more pizza for your money?

- **Option 1:** One Large 12-inch Pizza for ₹600
- **Option 2:** Two Medium 8-inch Pizzas for ₹600

1. Option 1 Area (12-inch pizza, radius = 6 inches):

$$\text{Area} = \pi \times r^2 = 3.14 \times (6)^2 = 3.14 \times 36 = 113.04 \text{ sq. inches}$$

2. Option 2 Area (Two 8-inch pizzas, radius = 4 inches):

$$\text{One Pizza Area} = 3.14 \times (4)^2 = 3.14 \times 16 = 50.24 \text{ sq. inches}$$

$$\text{Total Area for 2 Pizzas} = 50.24 \times 2 = 100.48 \text{ sq. inches}$$



Pro Tip: The single 12-inch pizza gives you **12.5 sq. inches MORE** pizza than two 8-inch pizzas for the exact same price! Doubling the diameter quadruples the surface area.

Scenario B: Wheel Revolutions & Distance (ਪਹੀਏ ਦੇ ਚੱਕਰ ਅਤੇ ਦੂਰੀ)

Example: A bicycle wheel has a diameter of **70 cm**. How many full rotations/revolutions does it complete to travel a distance of **220 metres (22,000 cm)**?

1. **Step 1: Calculate Distance Covered in 1 Revolution (Circumference)**

$Circumference = \pi \times d = (22/7) \times 70\text{ cm} = 220\text{ cm}$

2. **Step 2: Calculate Number of Revolutions**

$Revolutions = Total\ Distance / Circumference = 22,000\text{ cm} / 220\text{ cm} = 100\text{ rotations}$

3. Circle Applications Cheatsheet

Application	Formula Used	Everyday Example
Boundary / Fencing	Circumference ($2\pi r$)	Fencing a circular garden or track border
Surface Coverage	Area (πr^2)	Round table covers, rugs, pizza sizes
Distance per Rotation	Circumference (πd)	Car/Bicycle speedometer & distance tracking

4. Practical Practice Exercises (ਅਭਿਆਸ ਲਈ ਪ੍ਰਸ਼ਨ)

Q1 Circular Park Walk: A circular park has a radius of 35 metres. If you walk 3 full laps around the boundary, how many metres have you walked?

Answer: 1 Lap = $2 \times (22/7) \times 35 = 220\text{ m}$. 3 Laps = $220 \times 3 = 660\text{ metres}$.

Q2 Round Table Cloth: You have a circular dining table with a diameter of 1.4 metres. What area of fabric is required to cover the table surface?

Answer: Radius = 0.7 m. Area = $(22/7) \times (0.7)^2 = (22/7) \times 0.49 = 1.54\text{ sq. metres}$.

Q3 Circular Well Safety Net: A round water well of diameter 14 feet needs a wire mesh safety net over it. Calculate the cost of the mesh at ₹50 per sq. ft.

Answer: Radius = 7 ft. Area = $(22/7) \times 49 = 154\text{ sq. ft}$. Total Cost = $154 \times ₹50 = ₹7,700$.