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**Circumference and Area of Circle**

In this topic we will discuss and learn about the circumference and area of circle.

**Circumference of circle:**The distance around the circular region is called its circumference. The ratio of circumference of any circle to its diameter is constant. This constant is denoted by π and is read as pie.

Circumference/Diameter = Pie

i.e., c/d = π   or   c = πd

We know that diameter is twice the radius, i.e., d = 2r

    C = π × 2r

⇒ C = 2πr

Therefore approximate value of π = 22/7 or 3.14.

**Area of circle:**The measure of the region enclosed inside the circle is called its area.



**Worked-out examples on how do you find the area of a circle and the circumference of circle:**

**1.***Find the circumference and area of radius 7 cm.*

**Solution:**

Circumference of circle = 2πr

                                     = 2 × 22/7 × 7

                                     = 44 cm

Area of circle = πr²

                      = 22/7 × 7 × 7 cm²

                      = 154 cm²

**2.***A race track is in the form of a ring whose inner circumference is 220 m and outer circumference is 308 m. Find the width of the track.*

**Solution:**

Let r₁ and r₂ be the outer and inner radii of ring.

Then 2πr₁ = 308

2 × 22/7 r₁ = 308

⇒ r₁ = (308 × 7)/(2 × 22)

⇒ r₁ = 49 m

2πr₂ = 220

⇒ 2 × 22/7 × r₂ = 220

⇒ r₂ = (220 × 7)/(2 × 22)

⇒ r₂ = 35 m

Therefore, width of the track = (49 - 35) m = 14 m

**3.***The area of a circle is 616 cm². Find its circumference.*

**Solution:**

We know area of circle = πr²

⇒ 22/7 × r² = 616

⇒ r² = (616 × 7)/22

⇒ r² = 28 × 7

⇒ r = √(28 × 7)

⇒ r = √(2 × 2 × 7 × 7)

⇒ r = 2 × 7

⇒ r = 14 cm

Therefore, circumference of circle = 2πr

                                                       = 2 × 22/7 × 14

                                                       = 88 cm

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