## **Circles:**

### CASE STUDY 1:

A Ferris wheel (or a big wheel in the United Kingdom) is an amusement ride consisting of a rotating upright wheel with multiple passenger-carrying components (commonly referred to as passenger cars, cabins, tubs, capsules, gondolas, or pods) attached to the rim in such a way that as the wheel turns, they are kept upright, usually by gravity.

After taking a ride in Ferris wheel, Aarti came out from the crowd and was observing her friends who were enjoying the ride . She was curious about the different angles and measures that the wheel will form. She forms the figure as given below.



- **1.** In the given figure find  $\angle ROQ$ 
  - a) 60
  - b) 100
  - c) 150
  - d) 90

2. Find ∠RQP

- a) 75
- b) 60
- c) 30
- d) 90
- 3. Find ∠RSQ
  - a) 60
  - b) 75
  - c) 100
  - d) 30
- 4. Find ∠ORP
- a) 90
- b) 70
- c) 100
- d) 60

### ANSWERS:

- 1. c) 150
- 2. a) 75
- 3. b) 75
- 4. a) 90

### CASE STUDY 2:

Varun has been selected by his School to design logo for Sports Day T-shirts for students and staff . The logo design is as given in the figure and he is working on the



fonts and different colours according to the theme. In given figure, a circle with centre O is

inscribed in a  $\triangle$ ABC, such that it touches the sides AB, BC and CA at points D, E and F respectively. The lengths of sides AB, BC and CA are 12 cm, 8 cm and 10 cm respectively.



- 1. Find the length of AD
  - a) 7
  - b) 8
  - c) 5
  - d) 9
- 2. Find the Length of BE
  - a) 8
  - b) 5
  - c) 2
  - d) 9
- 3. Find the length of CF
  - a) 9
  - b) 5
  - c) 2
  - d) 3
- 4. If radius of the circle is 4cm, Find the area of  $\triangle OAB$ 
  - a) 20
  - b) 36
  - c) 24
  - d) 48
- **5.** Find area of  $\triangle ABC$ 
  - a) 50
  - b) 60
  - c) 100
  - d) 90

# ANSWERS:

- **1.** a) 7
- **2.** b) 5
- **3.** d) 3
- **4.** c) 24
- **5.** b) 60