

SATISH CHANDRA MEMORIAL SCHOOL

Case Study Class Test

Class: VII

Topics: Comparing Quantities, Perimeter and Area

Maximum Marks: 10

Time: 30 minutes

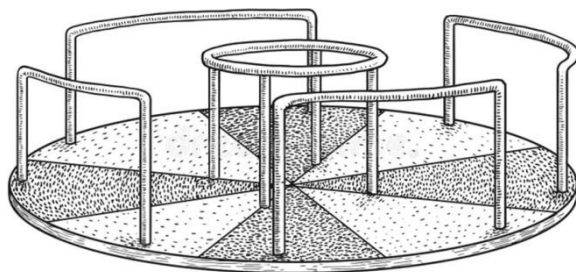
CASE STUDY 01

[1 × 5 = 5]

After coming back from school, Rituja along with her two friends-Nitu and Baishali go to the playground regularly to ride the merry-go-round and play with it.

A roundabout or merry-go-round is a piece of playground equipment, a flat circular disk, about 3 m in diameter, with bars on it that act as both hand-holds and something to lean against while riding. The disk can be made to spin by pushing or pulling on its handles, either by running around the outside, or by pulling and re-grabbing as it spins, from a stationary stance.

The circular disk is divided into 8 equal sectors, out of which four are coloured red and rest of them are coloured black. There are four handholds of equal length at the edge of the flat disk from where children can take support while riding. The gap between any two successive handholds is 1.2 m. In the middle there is another circular shaped handhold of diameter 77 cm.



Q1. The area of the circular disk of the merry-go-round is – ($\pi=3.14$)

- (a) 7.065m^2 (b) 7.506m^2 (c) 7.056m^2 (d) 7.605m^2

Q2. The total sum of area of all red sectors on the circular disk (upto 2 decimal places) is –

- (a) 1.77m^2 (b) 7.53m^2 (c) 1.67m^2 (d) 1.72m^2

Q3. The circumference of the circular ring of the handhold in the center is ($\pi=\frac{22}{7}$) –

(Neglecting the width of the ring)

- (a) 2.24m (b) 2.42m (c) 2.44m (d) 2.34m

Q4. The length of each handhold at the edge of the circular flat disk is ($\pi=3.14$)–

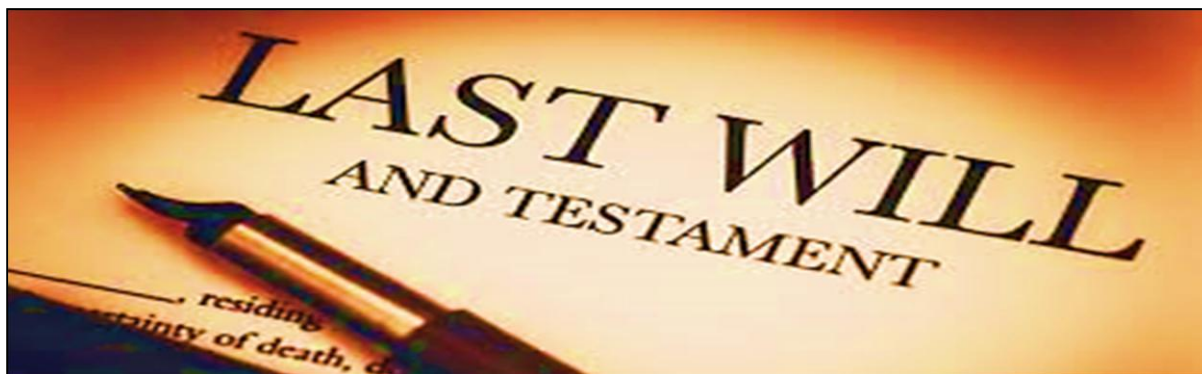
- (a) 1.55m (b) 1.42m (c) 1.15m (d) 1.65m

Q5. If Rituja rode the merry-go-round for four consecutive rounds, then she covered a distance equivalent to–($\pi=3.14$)

- (a) 37.64m (b) 37.67m (c) 37.62m (d) 37.68m

CASE STUDY 02

[1 × 5 = 5]



Last year, Kartik Shankar Paul, a famous poet and story book writer of our generation passed away. He wrote many books for children and also won the Sahitya Akademi Award for his contributions in Bengali literature.

The Mitra&Ghosh publisher has the copyright of all his published books. After he passed away, his wife and daughter found a will in his locker.

In the will it was written that after his death every year, 40% of the profit gained by selling his books in a year, will be provided as royalty to his wife, Manikuntala Devi.

According to the will, the publisher provided a cheque of Rs.6,50,000 to Manikuntala Devi. She deposited the money in SBI as MIS and for that bank will provide 7.8% interest per annum which will be payable quarterly.

She also found some unpublished manuscript of poems and handed them over to publisher by making a deal that the publisher has to pay her the selling price of 20 copies for each 100 copies of books sold.

Mitra&Ghosh published the book with an MRP of Rs.350 and sell it at 30% discount. It is found that at the end of one year, they were able to sell total 550 copies of the book.

Q6. The selling price of Kartik babu's last book was–

- (a) Rs.245 (b) Rs. 270 (c) Rs.320 (d) Rs.105

Q7. After one year of the publication of the book, the publisher will pay Manikuntala Devi an amount of –

- (a) Rs.24,500 (b) Rs.26,500 (c) Rs.29,590 (d) Rs.26,950

Q8. Manikuntala Devi receives quarterly from SBI as interest for the MIS—

- (a) Rs.12,657 (b) Rs.12,675 (c) Rs.12,625 (d) Rs.12,524

Q9. The total profit earned by the publisher from the storybooks of Kartik babu before his death is —

- (a) Rs.16,25,000 (b) Rs.12,00,000 (c) Rs.18,30,333 (d) Rs.10,89,999

Q10. If Manikuntala Devi asked to give her the selling price of 24 copies instead of 20 copies for each 100 copies of books sold in her deal with publisher, then how much money will she earn more?

- (a) Rs.5,930 (b) Rs.6,390 (c) Rs.5,390 (d) Rs.5,370