# 26. RACES AND GAMES

## IMPORTANT FACTS

**Races:** A contest of speed in running, riding, driving, sailing or rowing is called race

**Course:** The ground or path on which contests are made is called a race course.

**Starting Point:** The point from which a race begins is known as a starting point.

**Winning Point or Goal:** The point set to bound a race is called a winning paint or a goal.

**Winner:** The person who first reaches the winning point is called a winner.

**Dead Heat Race:** If all the persons contesting a race reach the goal exactly at the same time, then the race is said to be a dead heat race.

**Start:** Suppose A and B are two contestants in a race. If before the start of the race, A is at the starting point and B is ahead of A by 12 metres, then we say that 'A gives B, a start of 12 metres.

To cover a race of 100 metres in this case, A will have to cover 100 metres while B will
have to cover only (100 - 12) = 88 metres.

In a 100 m race, 'A can give B 12 m' or 'A can give B a start of 12 m' or 'A beats 12 m' means that while A runs 100 m, B runs (100 - 12) = 88 m.

**Games:** 'A game of 100, means that the person among the contestants who scores 100m first is the winner.
If A scores 100 points while B scores only 80 points, then we say that 'A can give B 20 points.

## SOLVED EXAMPLES :

### Ex. 1. In a km race, A beats B by 28 metres or 7 seconds. Find A's time over the course.

**Sol.** Clearly, B covers 28 m in 7 seconds.

:. B's time over the course = $\frac{278 \times 1000}{}$ sec = 250 seconds.

:. A's time over the course = (250 - 7-) sec = 243 sec = 4 min. 3 sec.

**Ex. 2. A runs 1 ¾ times as fast as B. if A gives B a start of 84 m, bow far must winning post be so that A and B might reach it at the same time?**

**Sol**. Ratio of the rates of A and B = 7/4 : 1 = 7 : 4.
So, in a race of 7 m, A gains 3m over B.
:. 3 m are gained by A in a race of 7 m.

:. 84 m are gained by A in a race of (7/3 x 84) m = 196 m.

:. Winning post must be 196 m away from the starting point.

**Ex. 3. A can run 1 km in 3 min. 10 sec. and B can cover the same distance in 3 min. 20 sec. By what distance can A beat B ?**

**Soln**:Clearly, A beats B by 10 sec.

Distance covered by B in 10 sec. = $\left(\frac{1000 \times 10}{200}\right)$m = 50 m.

Therefore A beats B by 50 metres.

**Ex .4 . In a 100 m race, A runs at 8km per hour. If A gives B a start of 4 m and still him by 15 seconds, what is the speed of B ?**

**Sol:** Time taken by A to cover 100 m =(60 X 60 / 8000) x 100 sec = 45 sec.
B covers (100 - 4) m = 96 m in (45 + 15) sec = 60 sec.
B's speed = $\left(\frac{96 \times 60 \times 60}{60 \times 1000}\right)$km/hr = 5.76 km/hr.

**Ex. 5. A, Band C are three contestants in a km race. If A can give B a start of 40 m and A can give C a start of 64m how many metre's start can B give C ?**

**Sol:** While A covers 1000 m, B covers (1000 - 40) m = 960 m and

C covers (1000 - 64) m or 936 m.
When B covers 960 m, C covers 936 m.

**Ex 6. In a game of 80 points; A can give B 5 points and C 15 points. Then how many points B can give C in a game of 60 ?**

**Sol.** A: B = 80 : 75, A : C = 80 : 65.
B/C = ( B/ A * A/C) = (75 / 80 * 80 / 65) = 15/13 = 60 /52 = 60: 5
Therfore ,In a game of 60, B can give C 8 points.

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