

# Mathematics

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(Chapter – 12) (Heron's Formula)(Exemplar Problems)

(Class – IX)

## Exercise 12.3

### Question 1:

Find the cost of laying grass in a triangular field of sides 50 m, 65 m and 65 m at the rate of Rs 7 per  $m^2$

### Answer 1:

Since, ABC is a triangular field of sides

AB = a = 50m, BC = b = 65m and CA = c = 65m

∴ Now, semi –perimeter of a triangle field,

$$s = \frac{a + b + c}{2} = \frac{50 + 65 + 65}{2} = \frac{180}{2} = s = 90m$$

∴ Area of a triangular field,

$$= \sqrt{s(s - a)(s - b)(s - c)} \quad \text{[By Heron's formula]}$$

$$= \sqrt{90(90 - 50)(90 - 65)(90 - 65)}$$

$$= \sqrt{90 \times 40 \times 25 \times 25}$$

$$= 3 \times 2 \times 10 \times 25$$

$$= 6 \times 250 = 1500 m^2$$

∴ Cost of laying grass per  $1m^2 = \text{Rs. } 7$

∴ Cost of laying grass per  $1500m^2 = 7 \times 1500 = \text{Rs. } 10500$

Hence, the cost of laying grass in a triangular field is Rs.10500.

