Heron's Formula — Exercise 10.1 Solutions (NCERT)

Style: same as provided 'Triangles' solutions. Questions shown only by first and last four words.

Square roots written as plain text 'square root of(...)' to avoid symbol rendering issues.

Question 1: A traffic signal board ... of the signal board

Given: Equilateral triangle with perimeter = 180 cm.

So each side a = 180/3 = 60 cm.

Semi-perimeter s = 90.0 cm.

Area = square root of [s (s-a) (s-b) (s-c)] (Heron's formula).

Area = square root of [90 (30) (30) (30)]

= 1558.846 cm^2 (exact = 900 * square root of(3) ≈ 1558.846 cm^2)

Question 2: The triangular side walls ... rent did it pay

Given sides = 122 m, 22 m, 120 m. Rate = Rs5000 per m^2 per year. Hired for 3 months.

Semi-perimeter s = (122+22+120)/2 = 132 m.

Area = square root of [s (s-a) (s-b) (s-c)].

Area = square root of [132 (10) (110) (12)] = 1320.000 m^2.

Rent per year for whole wall = Rs6600000.00; for 3 months = Rs1650000.00.

Question 3: There is a slide ... area painted in colour

Given sides = 15 m, 11 m, 6 m.

Semi-perimeter s = (15+11+6)/2 = 16 m.

Area = square root of [16 (1) (5) (10)] = 28.284 m^2.

Therefore, painted area = 28.284 m^2.

Question 4: Find the area of ... the perimeter is 42cm

Given two sides = 18 cm and 10 cm, perimeter = 42 cm.

Third side c = 42 - (18+10) = 14 cm.

Semi-perimeter s = (18+10+14)/2 = 21 cm.

Area = square root of [21 (3) (11) (7)] = 69.649 cm^2.

Question 5: Sides of a triangle ... 540cm Find its area

Given ratio = 12:17:25 and perimeter = 540 cm. Sum of ratio = 54.

Scale factor x = 540/54 = 10. So sides = 120 cm, 170 cm, 250 cm.

Semi-perimeter s = (120+170+250)/2 = 270 cm.

Area = square root of [270 (150) (100) (20)] = 9000.000 cm^2.

Question 6: An isosceles triangle has ... area of the triangle

Given isosceles triangle with perimeter = 30 cm and each equal side = 12 cm.

Base = 30 - 2×12 = 6 cm.

Semi-perimeter s = (12+12+6)/2 = 15 cm.

Area = square root of [15 (3) (3) (9)] = 34.857 cm^2.

Generated: Heron's Formula Exercise 10.1 solutions. Square roots written as plain text to avoid symbol issues.