

Exercise 7A

Question 18:

Let, a = 16 cm, b = 12 and c = 20 cm

Let us now find s:

$$s = \frac{1}{2}(a+b+c)$$

$$= \left(\frac{16+12+20}{2}\right) cm = \left(\frac{48}{2}\right) cm$$

:. Area of one tile = 96 cm<sup>2</sup>

 $\Rightarrow$  Area of 16 tiles = 96 × 16 = 1536 cm<sup>2</sup>

Cost of polishing the tiles per sq.cm = Re.1

Thus, the total cost of polishing all the tiles =  $Rs. (1 \times 1536)$ 

= Rs. 1536.

Question 19:

Consider the right triangle ABC.

By Pythagoras Theorem, we have,

$$BC = \sqrt{AB^{2} - AC^{2}}$$

$$= \sqrt{17^{2} - 15^{2}}$$

$$= \sqrt{289 - 225}$$

$$= \sqrt{64}$$

$$= 8 \text{ cm}$$

Perimeter of quad. ABCD = 17 + 9 + 12 + 8 = 46 cm

Area of triangle  $\triangle ABC = \frac{1}{2} \times base \times height$ 

$$= \frac{1}{2} \times BC \times AC$$
$$= \frac{1}{2} \times 8 \times 15$$
$$= 60 \text{ cm}^2$$

For area of triangle ACD,

Let a = 15 cm, b = 12 cm and c = 9 cm

Therefore, 
$$s = \frac{a+b+c}{2} = \frac{15+12+9}{2} = 18 \text{ cm}$$

Area of 
$$\triangle ACD = \sqrt{s(s-a)(s-b)(s-c)}$$
  

$$= \sqrt{18(18-15)(18-12)(18-9)}$$

$$= \sqrt{18 \times 3 \times 6 \times 9}$$

$$= \sqrt{18 \times 18 \times 3 \times 3}$$

$$= 18 \times 3 = 54 \text{ cm}^2$$

Thus the area of quad. ABCD = Area of  $\triangle$ ABC + Area of  $\triangle$ ACD

$$= 60 + 54 = 114 \text{ cm}^2$$
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