Exercise 7A

Question 22:

Consider the triangle ABC,

Let a = 26 cm, b = 30 cm and c = 28 cm

$$s = \frac{26+30+28}{2} = \frac{84}{2} = 42 \text{ cm}$$

$$\text{Area of } ABC = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{42(42-26)(42-30)(42-28)}$$

$$= \sqrt{42\times16\times12\times14}$$

$$= \sqrt{14\times3\times16\times4\times3\times14}$$

$$= \sqrt{14\times14\times3\times3\times16\times4}$$

$$= 14\times3\times4\times2$$

$$= 336 \text{ cm}^2$$

In a parallelogram , diagonal divides the parallelogram in two equal area therefore

$$\therefore \text{ Area of quad. } ABCD = \text{Area of } \Delta ABC + \text{Area of } \Delta ACD$$

$$= \text{Area of } \Delta ABC \times 2$$

$$= 336 \times 2$$

$$= 672 \text{ cm}^2.$$

Question 23:

Consider the triangle ABC,

Let a = 10 cm, b = 16 cm and c = 14 cm

$$s = \frac{10+16+14}{2} = \frac{40}{2} = 20$$

$$\text{Area of } ABC = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{20(20-10)(20-16)(20-14)}$$

$$= \sqrt{20\times10\times4\times6}$$

$$= \sqrt{10\times2\times10\times4\times3\times2}$$

$$= \sqrt{10\times10\times4\times2\times2\times3}$$

$$= 10\times2\times2\times\sqrt{3}$$

$$= 40\sqrt{3} \text{ cm}^2$$

In a parallelogram , diagonal divides the parallelogram in two equal area therefore

$$\therefore \text{ Area of quad. } ABCD = \text{Area of } \Delta ABC + \text{Area of } \Delta ACD$$

$$= \text{Area of } \Delta ABC \times 2$$

$$= 40\sqrt{3} \times 2$$

$$= 80\sqrt{3} \text{ cm}^2$$

$$= 138.4 \text{cm}^2 \quad [\because \sqrt{3} = 1.73]$$

********** END **********