

Exercise 7A

Question 22:

Consider the triangle ABC, Let a = 26 cm, b = 30 cm and c = 28 cm $s = \frac{26 + 30 + 28}{2} = \frac{84}{2} = 42 \text{ cm}$ Area of ABC = $\sqrt{s(s-a)(s-b)(s-c)}$ = $\sqrt{42(42-26)(42-30)(42-28)}$ = $\sqrt{42 \times 16 \times 12 \times 14}$ = $\sqrt{14 \times 3 \times 16 \times 4 \times 3 \times 14}$ = $\sqrt{14 \times 14 \times 3 \times 3 \times 16 \times 4}$ = $14 \times 3 \times 4 \times 2$ = 336 cm²

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

:. Area of quad. ABCD = Area of ΔABC + Area of ΔACD
= Area of ΔABC
$$\times$$
 2
= 336 \times 2
= 672 cm².

Question 23: Consider the triangle ABC,

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

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

∴ Area of quad. ABCD = Area of
$$\triangle$$
ABC + Area of \triangle ACD
= Area of \triangle ABC × 2
= $40\sqrt{3} \times 2$
= $80\sqrt{3}$ cm²
= 138.4 cm² [∴ $\sqrt{3}$ = 1.73]

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