

Areas of Combined Plane Figures

Chapter 11: Areas Related to Circles · Topic 2

Key Concept

For example, finding the area of a square with a semicircle removed from one side requires calculating the square's full area, then subtracting the semicircle's area (half of πr^2 , where the radius equals half the square's side length that the semicircle sits on). Such combined figure problems are common in board examinations and test a student's ability to correctly identify the individual simple shapes within a complex figure and apply the appropriate combination of addition and subtraction of their areas.

Quick Revision Notes

- Combined plane figures require adding or subtracting the areas of simpler component shapes.
- Example: a square with a semicircle removed requires square area minus semicircle area.
- Correctly identifying the simple shapes within a complex figure is the key first step.
- These problems test the correct combination (addition/subtraction) of multiple area formulas.

Practice Questions

- 1 Find the area of a figure formed by a square of side 10cm with a semicircle removed from one side.
- 2 Calculate the area of a figure combining a rectangle (10cm x 6cm) with a semicircle (radius 3cm) attached to one side.
- 3 Explain the general strategy for solving combined plane figure area problems.