FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

G13: Plans and elevations

Solve problems using plans and elevations

20 marks · 25 minutes · Non-calculator

1) A solid made of 2 cm cubes has a 3 by 2 plan, and front and side elevations that are both 2 squares high everywhere. Find its volume.

..... cm^3

[Question 1: 3 marks]

2) A cylinder's plan is a circle of diameter 6 cm and its front elevation is a 6 cm by 10 cm rectangle. Find its exact volume.

..... cm^3

[Question 2: 3 marks]

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3) A square-based pyramid has an 8 cm by 8 cm square plan. Its front elevation is a triangle of height 3 cm. Find its total surface area.

..... cm^2

[Question 3: 4 marks]

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4) A prism's front elevation is a trapezium with parallel sides 4 cm and 8 cm and height 3 cm. Its side elevation is a 3 cm by 10 cm rectangle. Find its volume.

..... cm^3

[Question 4: 3 marks]

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5) A cone's plan is a circle of radius 3 cm and its front elevation is a triangle of height 4 cm. Find its exact curved surface area. (πrl)

..... cm^2

[Question 5: 3 marks]

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6) A solid is made of 5 cubes. Its plan shows 4 squares. Explain how the cubes must be arranged.

[Question 6: 2 marks]

7) A cuboid has a 5 cm by 3 cm plan and a 3 cm by 2 cm side elevation. Find its volume.

..... cm^3

[Question 7: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	96	12 cubes (P1, P1); 12×8 (A1).
2	90π	Radius 3, height 10 (P1, P1); A1.
3	144	Slant height 5 (P1); triangle faces 20 each (P1); base 64 (P1); A1.
4	180	Trapezium area 18 (P1, P1); A1.
5	15π	Slant height 5 (P1, P1); A1.
6	Explanation	4 on the ground and 1 on top of one of them (C2).
7	30	Dimensions 5, 3, 2 (P1); A1.