FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... **Class** .....

G16: Area and volume of prisms

Areas of triangles, parallelograms and trapezia; volumes of cuboids, prisms and cylinders

20 marks · 25 minutes · Non-calculator

1) A triangle has a base of 9 cm and a perpendicular height of 6 cm. Find its area.

..... cm^2

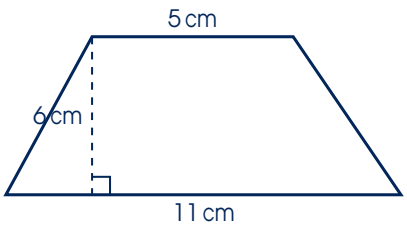
[Question 1: 2 marks]

2) A parallelogram has a base of 12 cm and a perpendicular height of 7 cm. Find its area.

..... cm^2

[Question 2: 1 marks]

3) Find the area of the trapezium.



..... cm^2

[Question 3: 2 marks]

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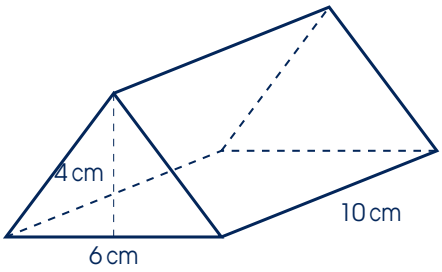
4) Find the volume of a cuboid measuring 4 cm by 5 cm by 7 cm.

..... cm^3

[Question 4: 1 marks]

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5) The triangular prism has a cross-section with base 6 cm and height 4 cm. It is 10 cm long. Find its volume.



..... cm^3

[Question 5: 2 marks]

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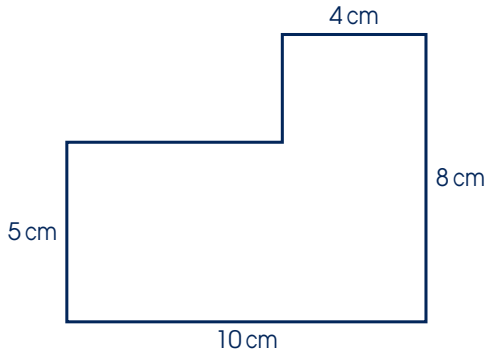
6) A cylinder has radius 3 cm and height 10 cm. Find its volume. Give your answer in terms of π.

..... cm^3

[Question 6: 2 marks]

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7) Find the area of this shape. All corners are right angles.



..... cm^2

[Question 7: 2 marks]

8) A trapezium has an area of 36 cm^2. Its parallel sides are 5 cm and 7 cm. Find its height.

..... cm

[Question 8: 2 marks]

9) A cuboid has a volume of 240 cm^3. Its base is 8 cm by 6 cm. Find its height.

..... cm

[Question 9: 2 marks]

10) A prism has a trapezium cross-section with parallel sides 4 cm and 8 cm and height 3 cm. The prism is 15 cm long. Find its volume.

..... cm^3

[Question 10: 2 marks]

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11) A triangle has an area of 30 cm^2 and a base of 12 cm. Find its perpendicular height.

..... cm

[Question 11: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	27	$\frac{1}{2} \times 9 \times 6$ (M1); A1.
2	84	B1.
3	48	$\frac{(5 + 11) \times 6}{2}$ (M1); A1.
4	140	B1.
5	120	Area 12 (M1); A1.
6	90π	$\pi \times 9 \times 10$ (M1); A1.
7	62	Split into rectangles, e.g. $10 \times 5 + 4 \times 3$, or $10 \times 8 - 6 \times 3$ (M1); 62 (A1).
8	6	$6h = 36$ (M1); A1.
9	5	$240 \div 48$ (M1); A1.
10	270	Area 18 (M1); A1.
11	5	$6h = 30$ (M1); A1.