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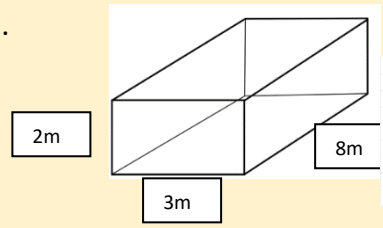
Grade 8

Mathematics

Volume

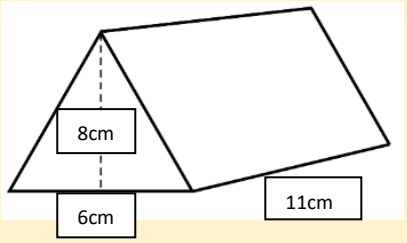
Question 1: Find the volume of the following objects

1.



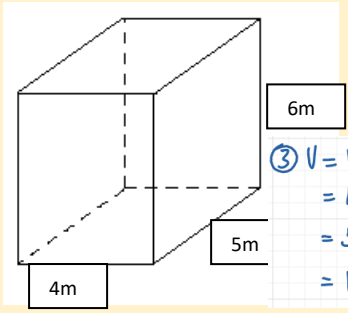
① V = base x height
= L x B x h
= 8 x 3 x 2
= 48 m³

2.



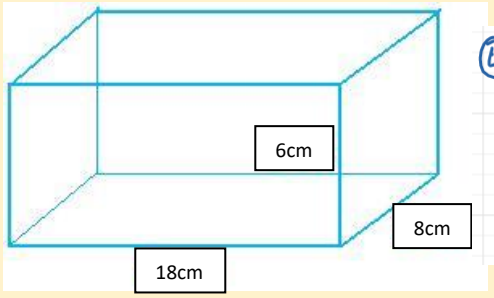
② V = base x height
= ½ . b . h x h
= ½ . 6 . 8 x 11
= 264 cm³

3.



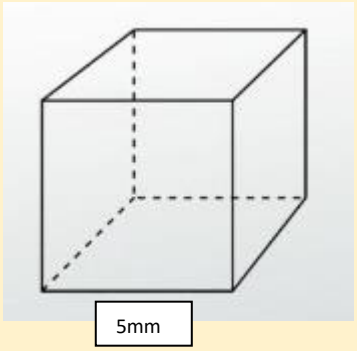
③ V = base x height
= L x b x h
= 5 x 4 x 6
= 120 m³

4.



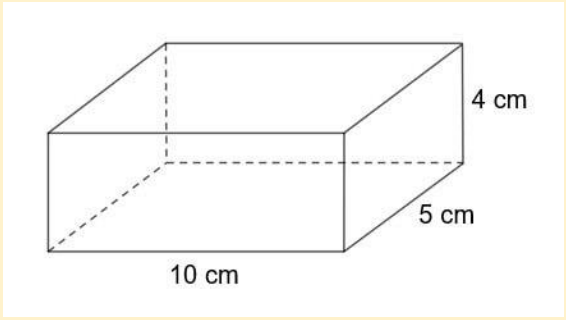
④ V = base x height
= L x b x h
= 18 x 8 x 6
= 864 cm³

5. a cube



⑤ V = base x height
= s^2 x h or s^3
= 5^2 x 5 = 5^3
= 125 mm³ = 125 mm³

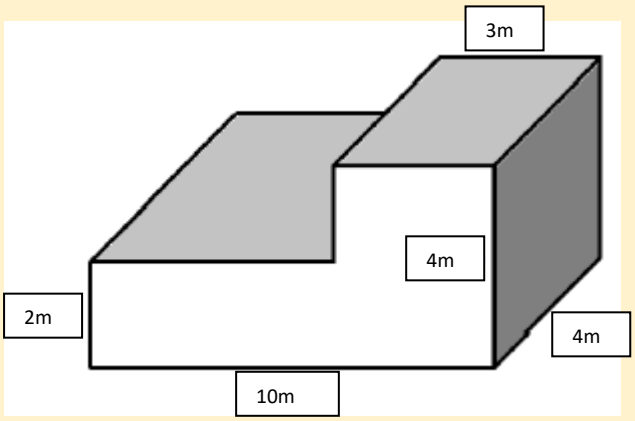
6.



⑥ V = base x height
= L x b x h
= 10 x 5 x 4
= 200 cm³

Question 2: Find the volume of the following complex objects

1.



① Work it out as 2 separate volumes. A large rectangular prism with a smaller rect prism on top.

Bottom one:

V = base × height

= $L \times b \times h$

= $10 \times 4 \times 2$

= $80\,m^3$

Top one:

V = base × height

= $L \times b \times h$

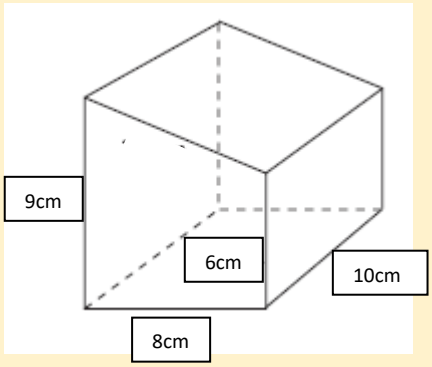
= $4 \times 3 \times 2$

= $24\,m^3$

Total V = $80m^3 + 24m^3$

= $104\,m^3$

2.



② Work it out as 2 separate volumes. A rectangular prism and a triangular prism.

Rectangular:

V = base × height

= $L \times b \times h$

= $10 \times 8 \times 6$

= $480\,cm^3$

Triangular:

V = base × height

= $\frac{1}{2} b h \times L$

= $\frac{1}{2} 8.3 \times 10$

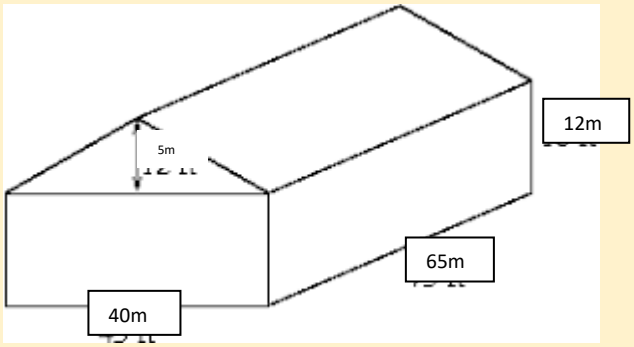
= $120\,cm^3$

Total V = $480cm^3 + 120cm^3$

= $600\,cm^3$

3.

4.



③ Work out as 2 separate volumes. A rectangular prism and a triangular one.

Rectangle:

V = base × height

= $L \times b \times h$

= $65 \times 40 \times 12$

= $31200m^3$

Triangular:

V = base × height

= $\frac{1}{2} b . h \times h$

= $\frac{1}{2} 40.5 \times 65$

= $6500\,m^3$

Total V = $31200m^3 + 6500m^3$

= $37700m^3$