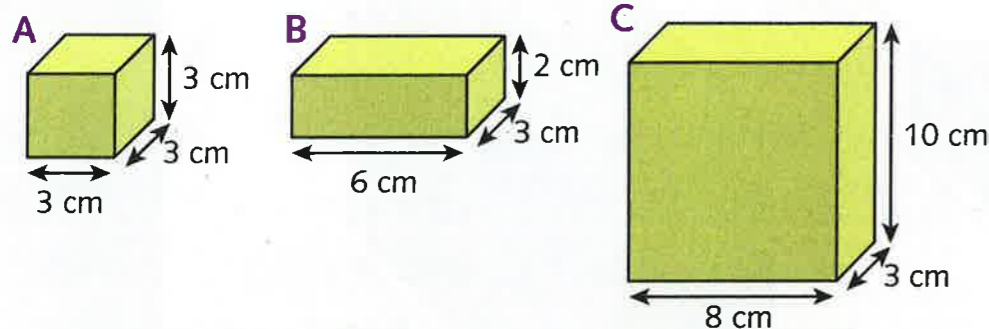# Calculating volume and finding missing lengths

Calculate the volume of cubes and cuboids and find missing lengths

Challenge 1

Copy the table below. Use the rule $V = lbh$ to calculate the volume.

A
3 cm
3 cm
3 cm

B
2 cm
3 cm
6 cm

C
10 cm
8 cm
3 cm

Example

3 cm
7 cm
2 cm

$V = lbh$

$= 7 \times 2 \times 3$

$= 42 \text{ cm}^3$

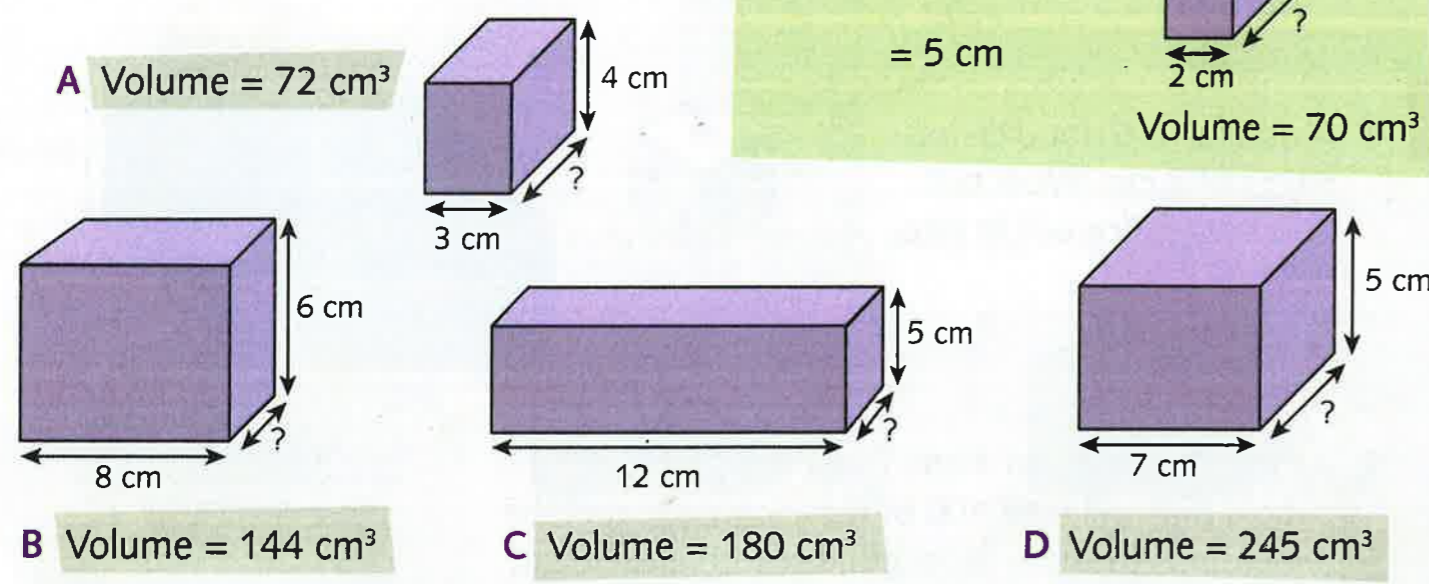| Cuboid	Length (cm)	Breadth (cm)	Height (cm)	Volume (cm³)
A				
B				
C				

Challenge 2

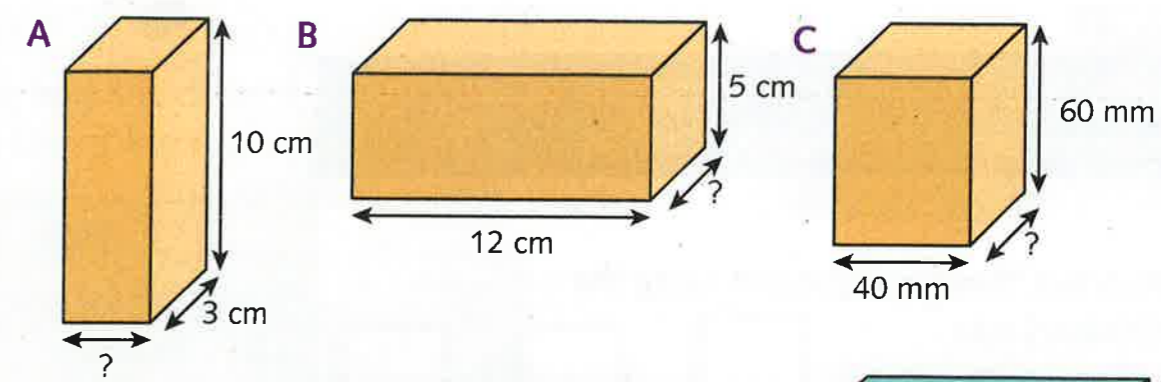**1** The volume is shown for each cuboid below. Calculate the missing length for each cuboid.

Example

Length = $V \div (bh)$
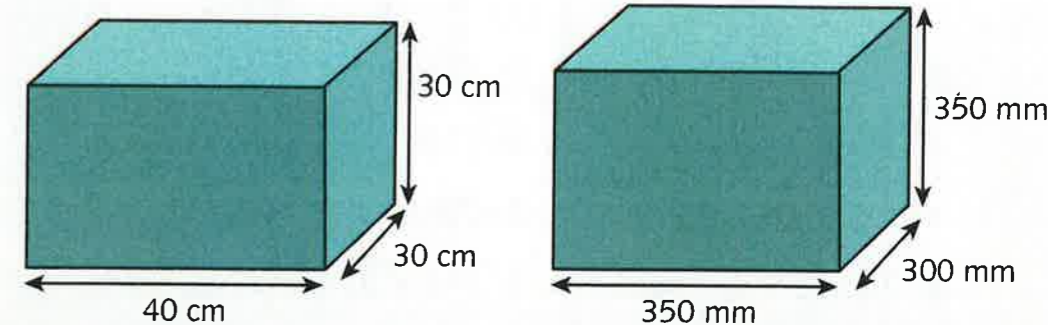
$= 70 \div (7 \times 2)$

$= 70 \div 14$

$= 5 \text{ cm}$

7 cm
2 cm
?

Volume = 70 cm³

A Volume = 72 cm³
4 cm
3 cm
?

B Volume = 144 cm³
6 cm
8 cm
?

C Volume = 180 cm³
5 cm
12 cm
?

D Volume = 245 cm³
5 cm
7 cm
?

2 Each cuboid below has a volume of 120 cm³. Find the missing dimension for each cuboid.

A
10 cm
3 cm
?

B
5 cm
12 cm
?

C
60 mm
40 mm
?

3 Find the difference in volume between these cuboids.

30 cm
30 cm
40 cm

350 mm
300 mm
350 mm

4 Find the difference in volume between these fish tanks.

0.4 m
0.5 m
1 m

50 cm
60 cm
80 cm
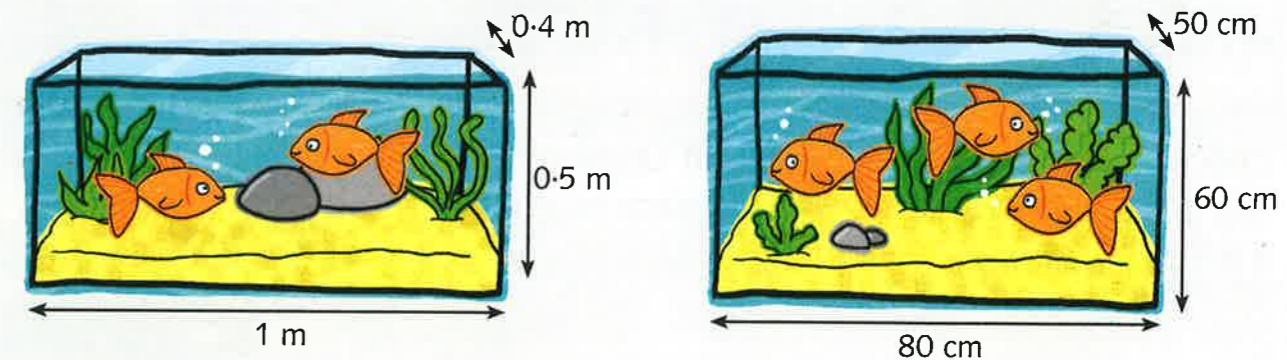
Challenge 3

Read each puzzle then find the values for the missing measurements for each shape described.

a My height is 5 m. My volume is 165 m³. What is my length and breadth if they are prime numbers?

b My volume is 273 mm³. All my measurements are odd numbers. What are they?

c One of my edges is 6 cm. My volume is 216 cm³. My other two edges are equal in length. What do they measure?

d My volume is 336 cm³. My measurements are three 1-digit consecutive numbers. What are they?