



Similar Shapes



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What is similar shapes ???

When two shapes are similar

1. The corresponding angles are equal
2. The corresponding sides must have the same proportion



For similar triangles



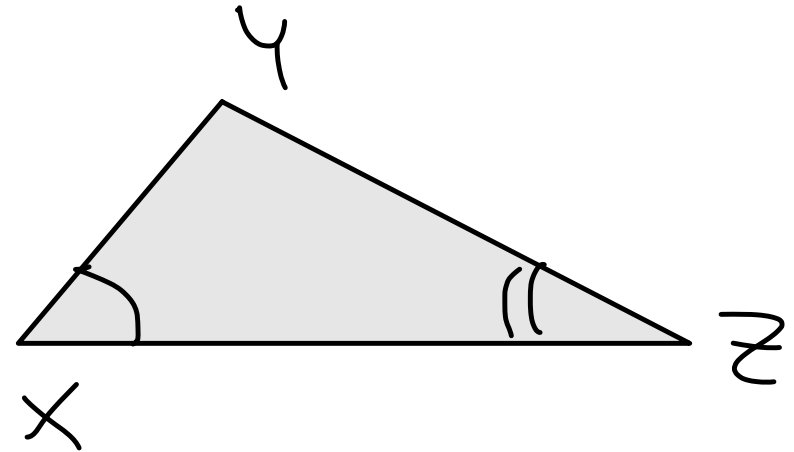
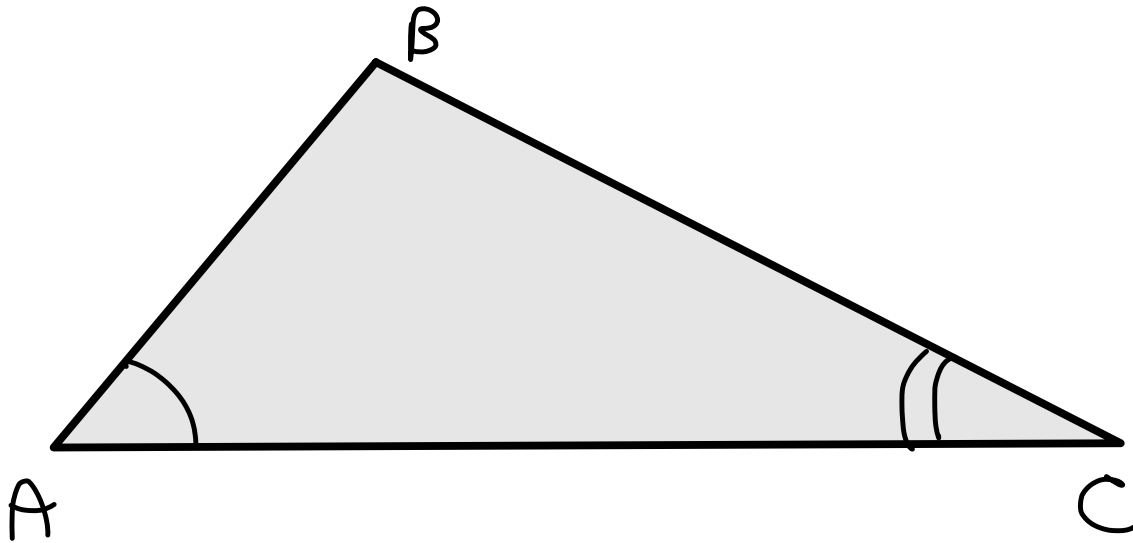
For other shapes



For regular shapes

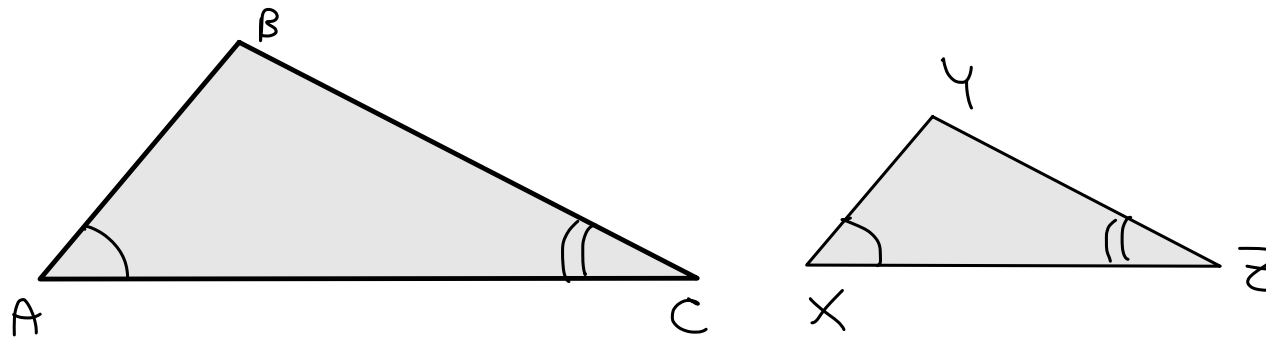


Calculation side length in similar shapes





Calculation side length in similar shapes



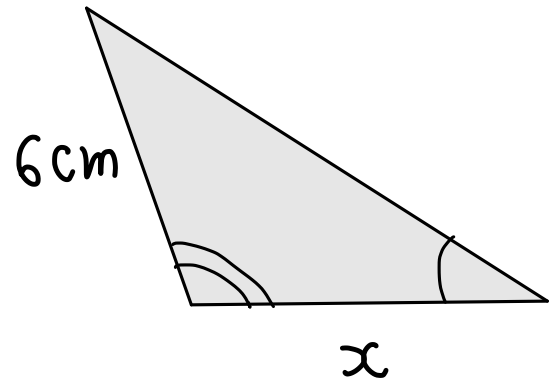
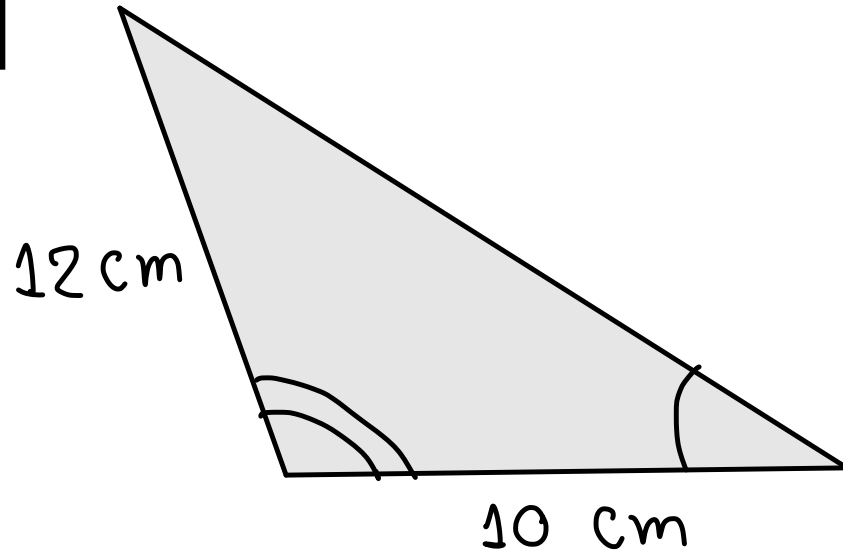
1. Find the scale factor of length

2. Multiply scale factor with the corresponding side length to unknown side



Find missing length

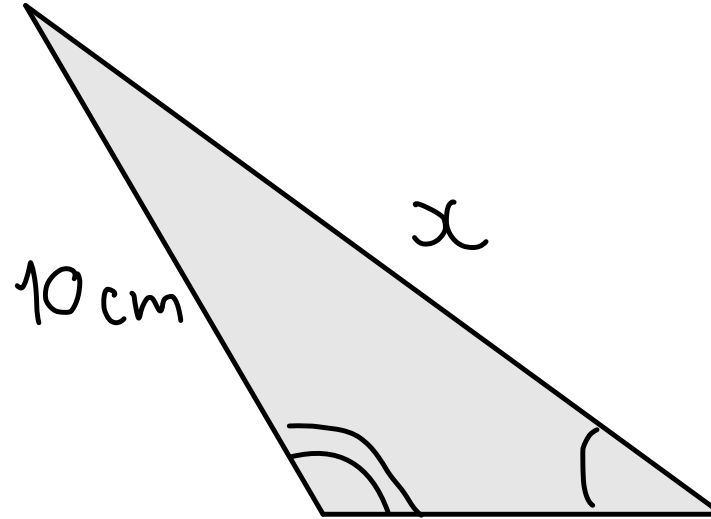
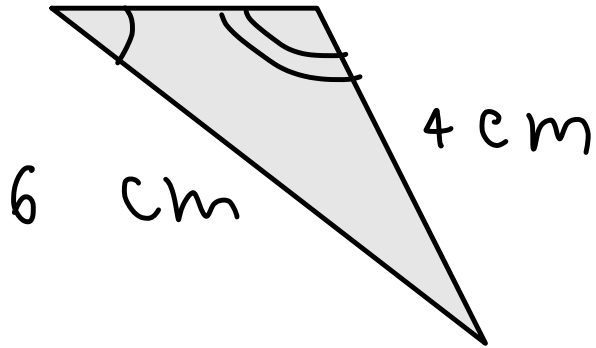
Q1





Find missing length

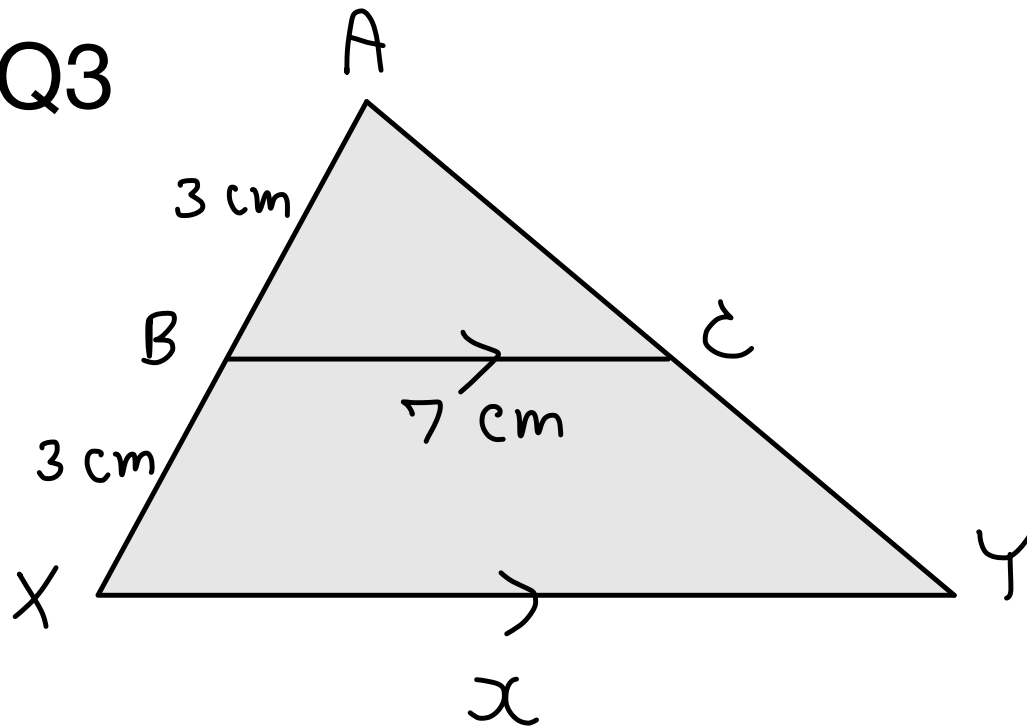
Q2





Find missing length

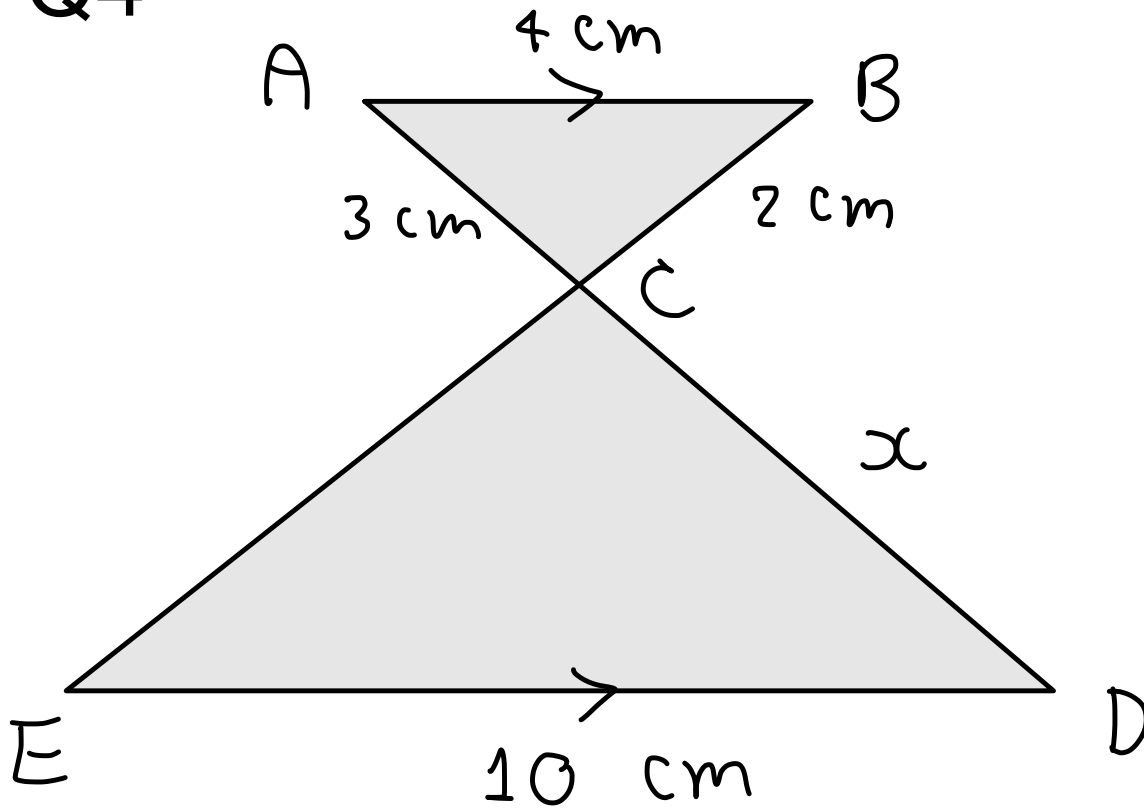
Q3





Find missing length

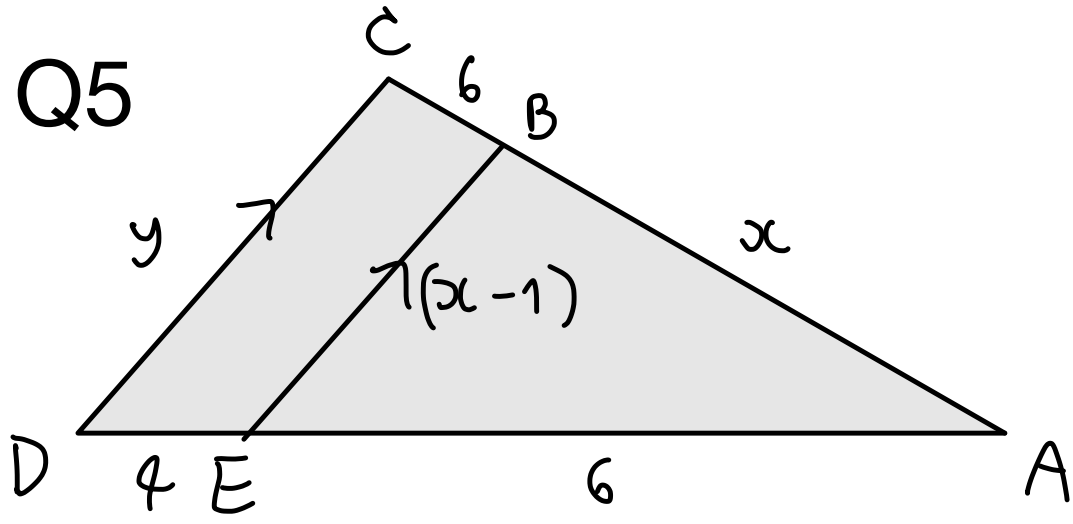
Q4





Find missing length

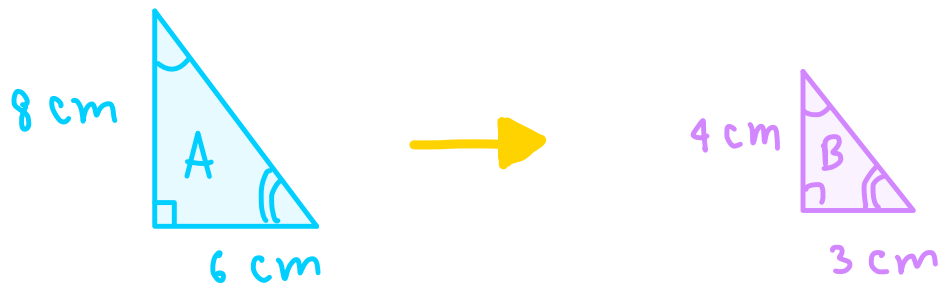
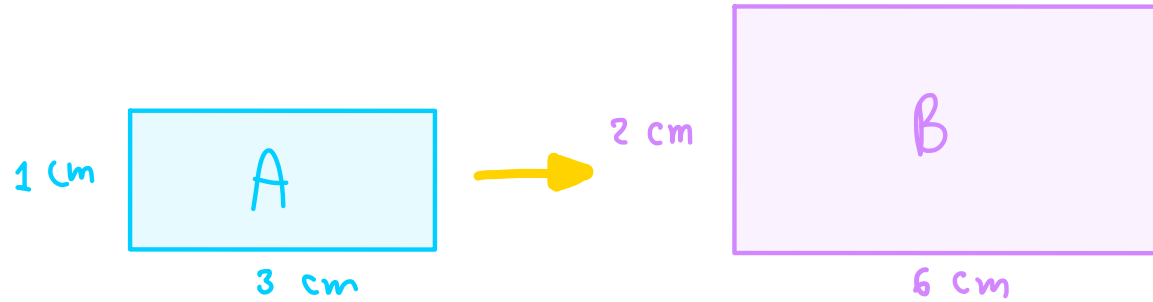
Q5





Calculation area in similar shapes

Notice

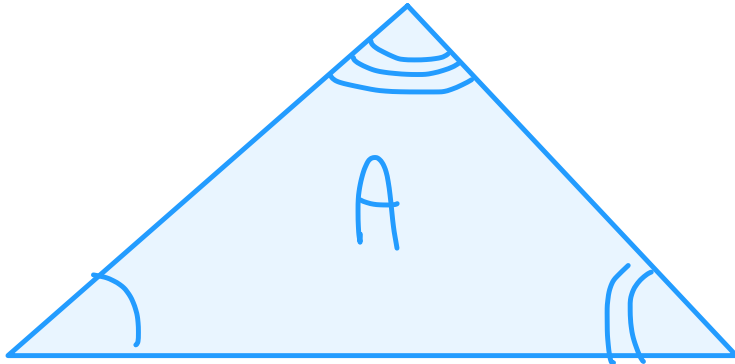




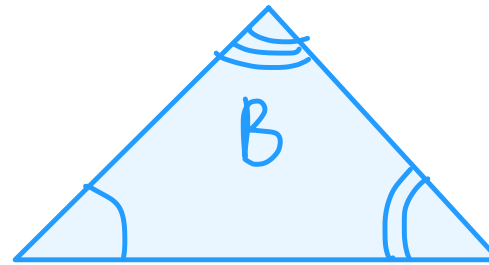
Calculation area in similar shapes



Q1. Find missing area



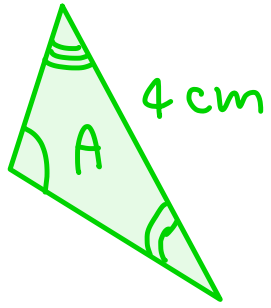
10 cm
area = 30 cm²



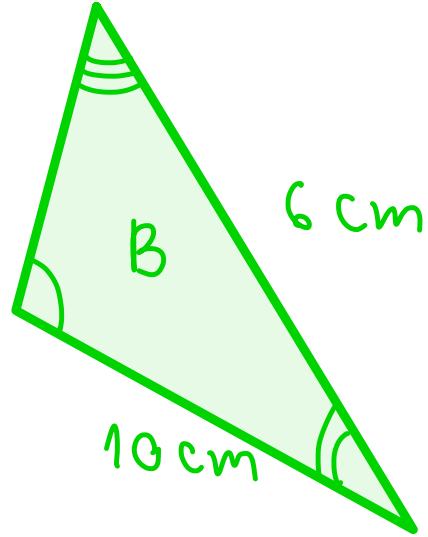
5 cm
area of B = ?



Q2. Find missing area



Area = 20 cm^2



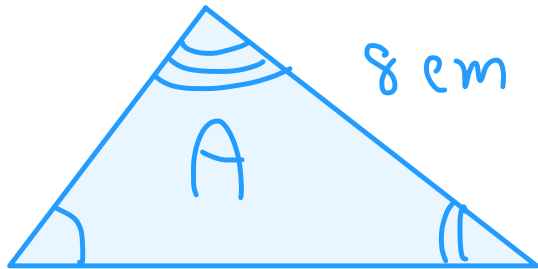
Area = ?



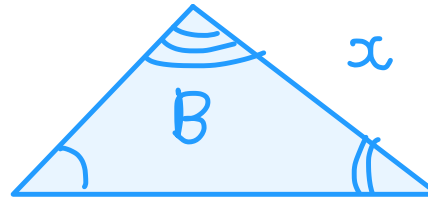
Calculation side length when two areas given



Q1. Find missing length



$$\text{area} = 20 \text{ cm}^2$$

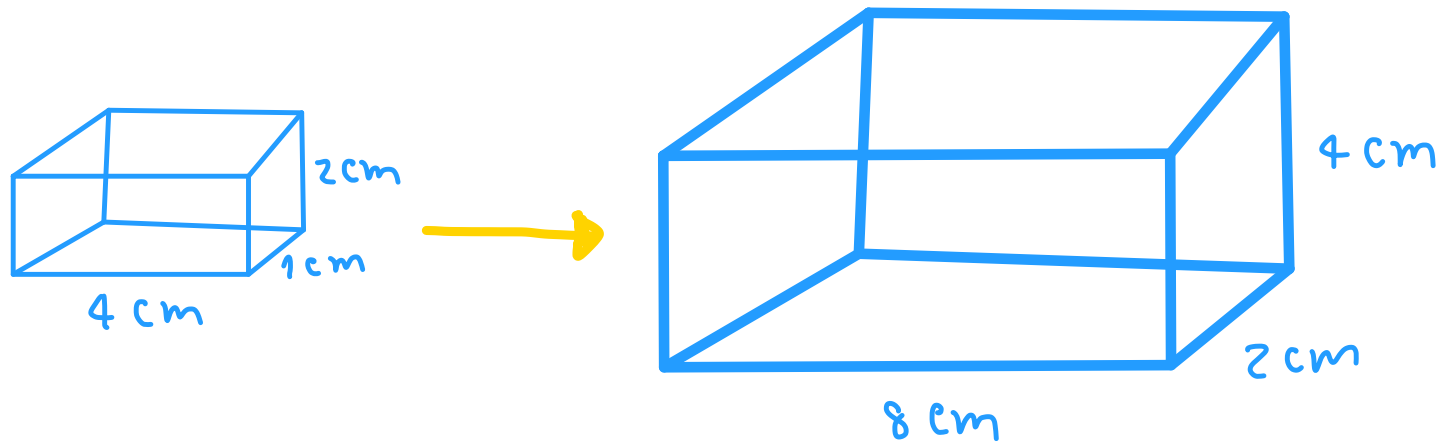


$$\text{area} = 5 \text{ cm}^2$$



Calculation volume in similar shapes

Notice

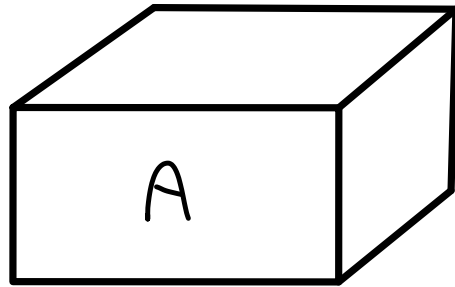




Calculation volume in similar shapes

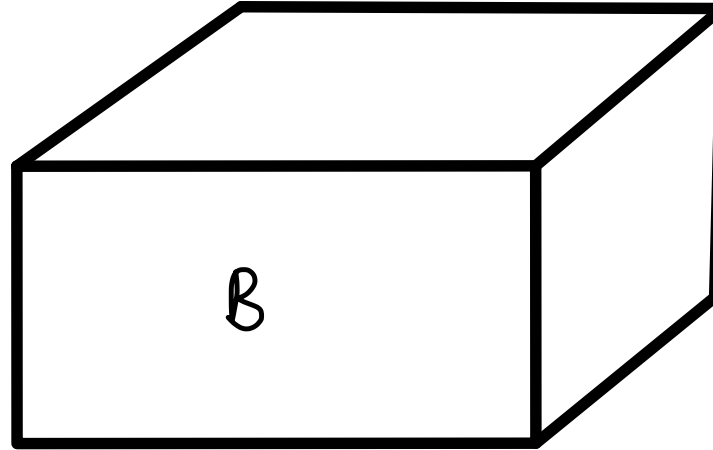


Q1. Find missing volume



4 cm

Volume = 15 cm^3



8 cm

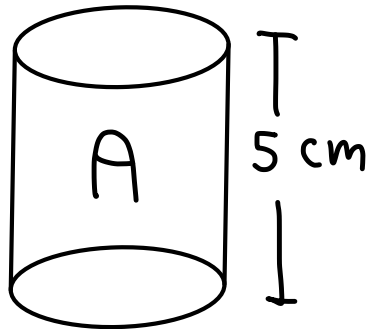
Volume of B = ?



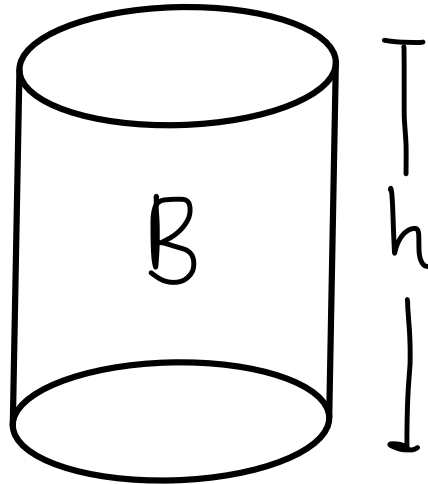
Calculation side length when two volume given



Q1. Find missing length



Volume = 100 cm^3



Volume = 800 cm^3

Find the value of h



Length & Area & Volume in similar shapes



Q1 The volumes of two mathematically similar solids are in the ratio 8 : 125

The surface area of the smaller solid is 24 cm^2

Work out the surface area of the larger solid.



Q2. X and Y are two geometrically similar solid shapes.

The total surface area of shape X is 450 cm^2 .

The total surface area of shape Y is 800 cm^2 .

The volume of shape X is 1350 cm^3 .

Calculate the volume of shape Y.