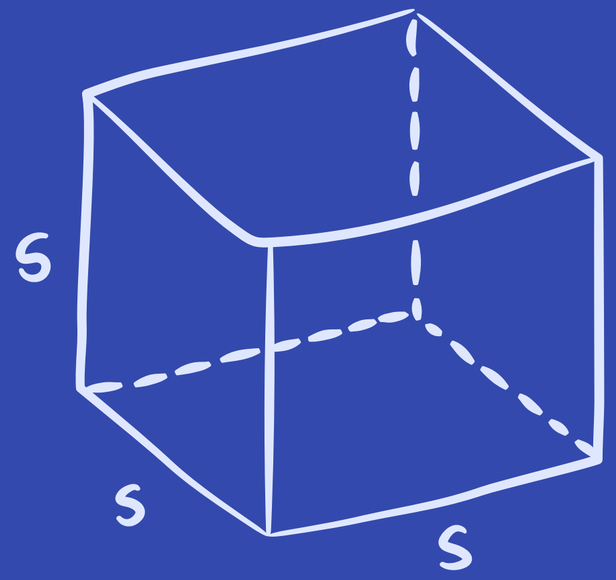


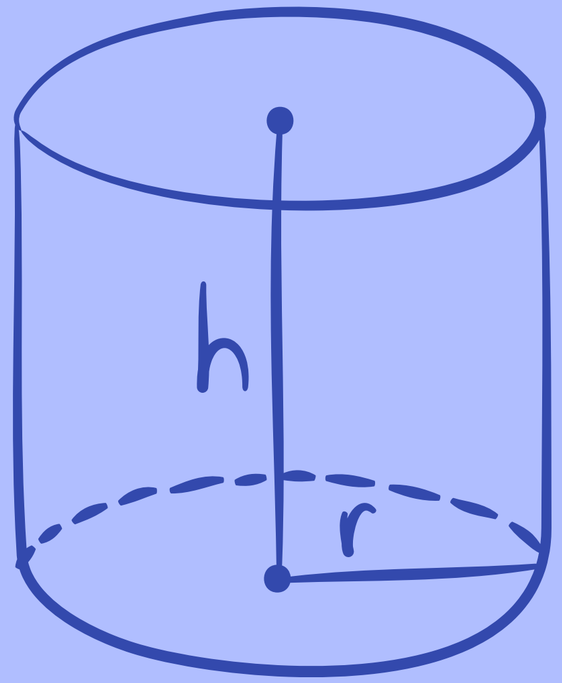
$V = s^3$

AREA & VOLUME

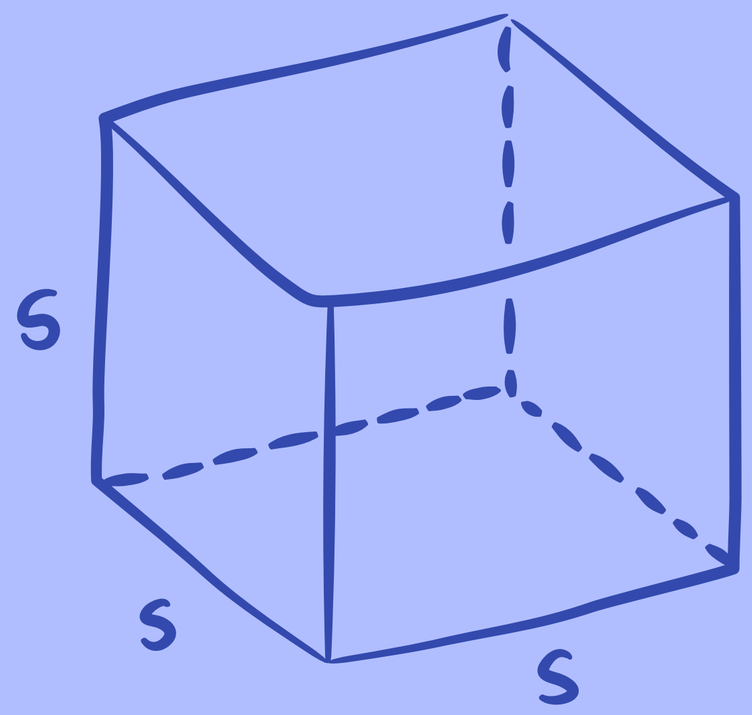
MATH PROBLEMS & SOLUTIONS

Q1.

A cylindrical water tank has a diameter of 2 meters and a height of 4 meters. The tank is filled with water to a height of 3 meters. How much water (in liters) is in the tank?



$$V = \pi r^2 h$$



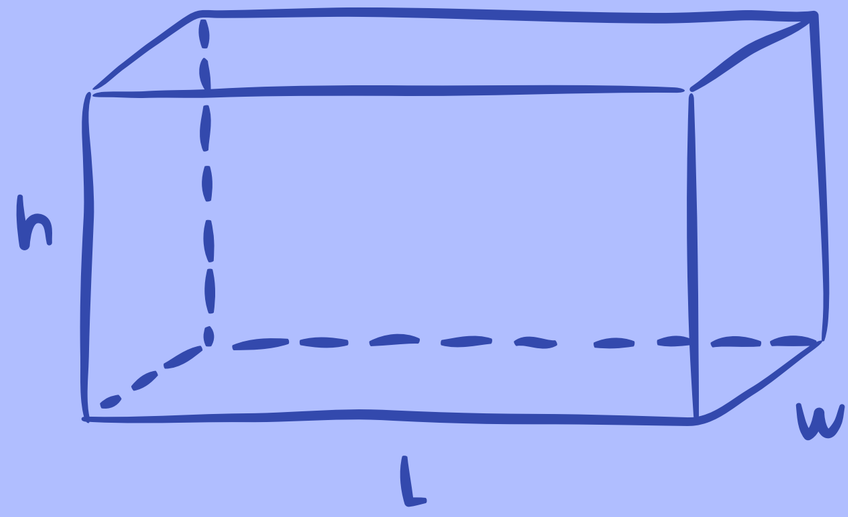
$V = s^3$

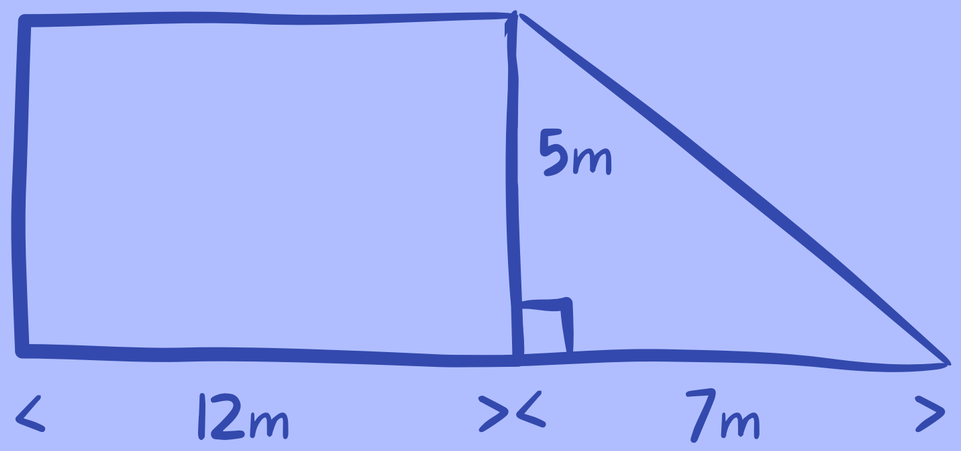
Q2.

A cube has a surface area of 338 square centimeters. What is its volume?

Q3.

Jiah is gifting his best friend a box of donuts. He wants to wrap it so he can keep the gift a surprise. If the box is 22cm x 15cm x 5cm, what is the minimum amount of wrapping paper he needs?

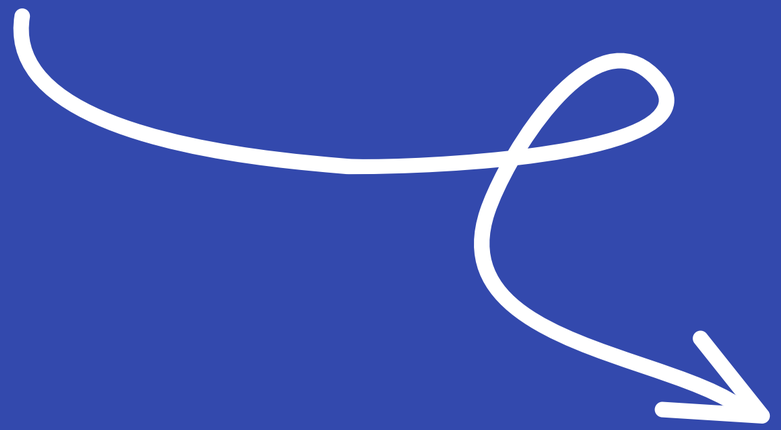




Q4.

A landscaper needs to lay turf for a client. The diagram above shows the dimensions of the client's backyard. How many square meters of turf does the landscaper need to cover the entire backyard?

ANSWERS



Q1.

radius = 0.5 x diameter

= 0.5 x 2

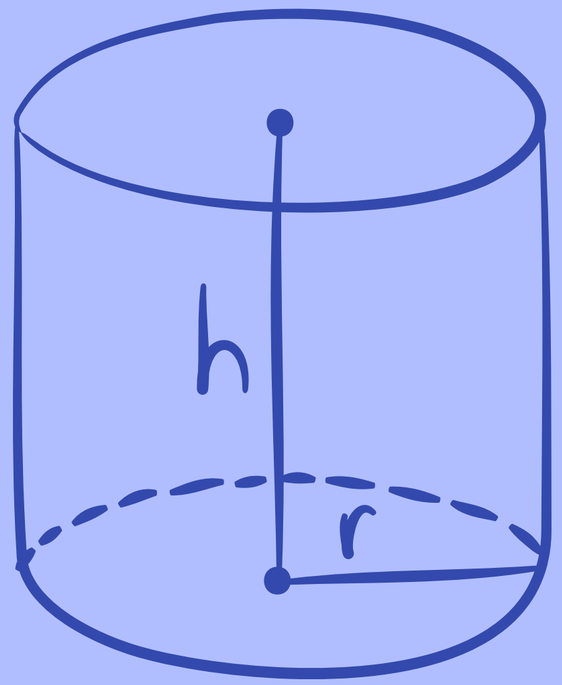
= 1m

V(cylinder) = π x r^2 x h

V(cylinder) = π x 1^2 x 3

V(cylinder) = 3π

V(cylinder) = 9.42m^3 (to 2 dec. places)



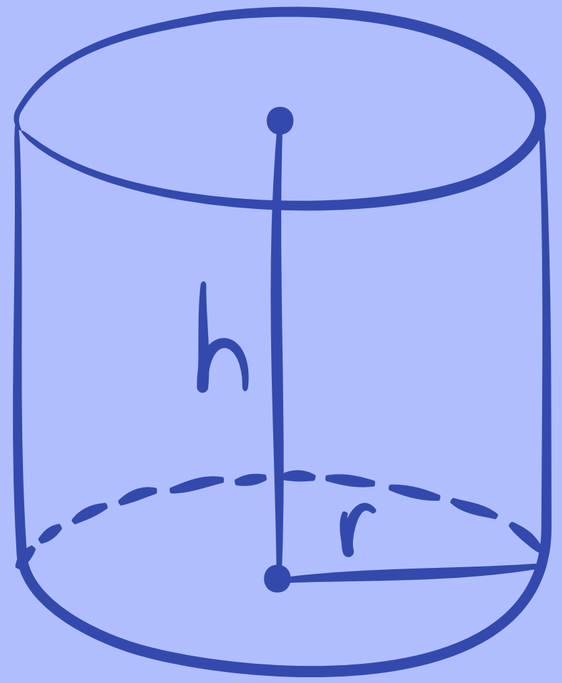
$V = \pi r^2 h$

Q1 cont.

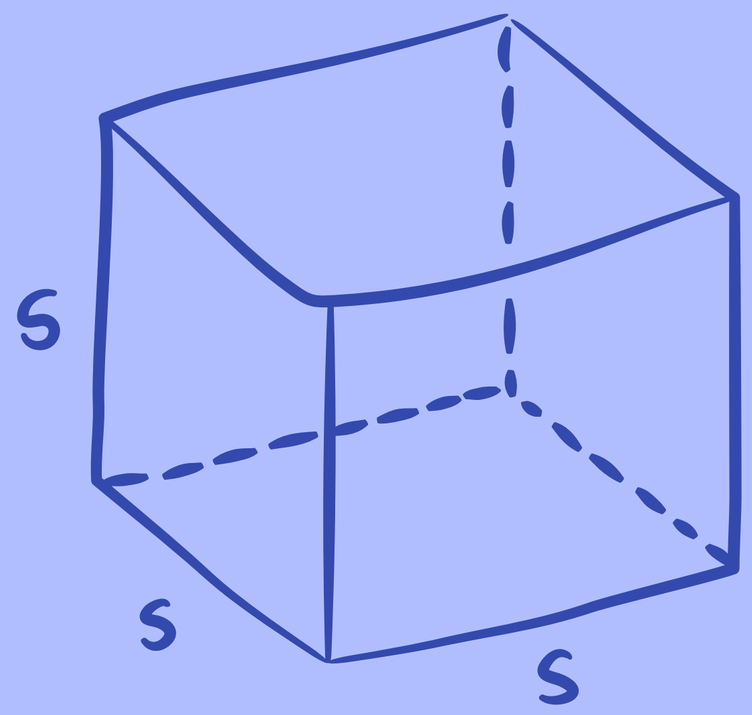
1 cubic meter = 1000L of water

V(water) = 9.42 x 1000

V(water) = 9420L of water



$$V = \pi r^2 h$$



$V = s^3$

Q2.

S.A (cube) = s^2 x 8

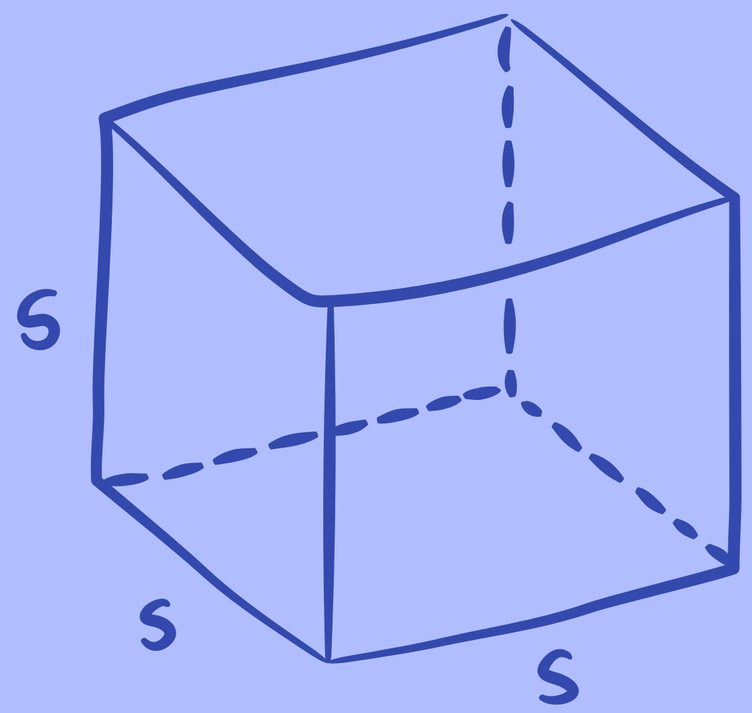
338 = s^2 x 8

338 ÷ 8 = s^2 x 8 ÷ 8

42.25 = s^2

$\sqrt{42.25} = \sqrt{s^2}$

l = 6.5cm



$V = s^3$

Q2 cont.

V(cube) = s^3

V(cube) = 6.5^3

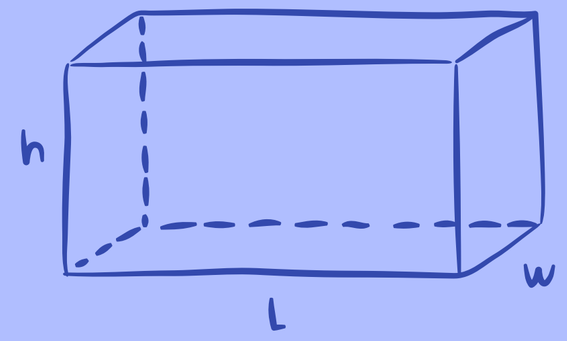
V(cube) = $274.625cm^3$

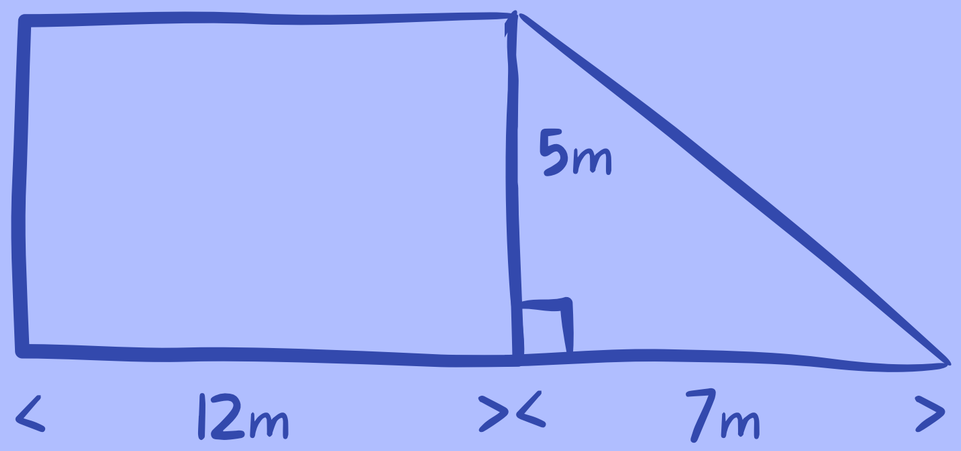
Q3.

S.A(rectangular prism) = 2(lw + lh + wh)

S.A(rectangular prism) = 2(22 x 15 + 22 x 5 + 15 x 5)

S.A(rectangular prism) = 1030cm²





Q4.

A(rectangle) = l x w

A(rectangle) = 12 x 5

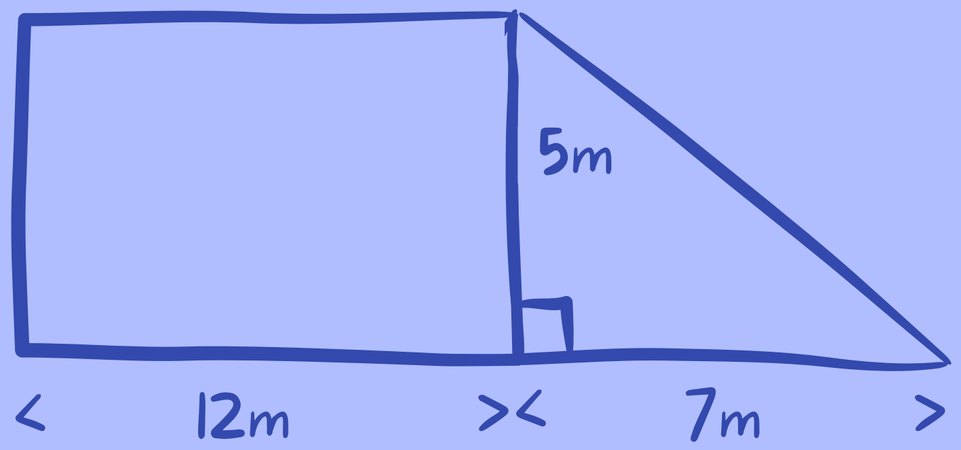
A(rectangle) = 60m²

A(triangle) = (b x h) ÷ 2

A(triangle) = (7 x 5) ÷ 2

A(triangle) = 17.5m²

Q4 cont.



Total area = 60 + 17.5

Total area = 77.5m²