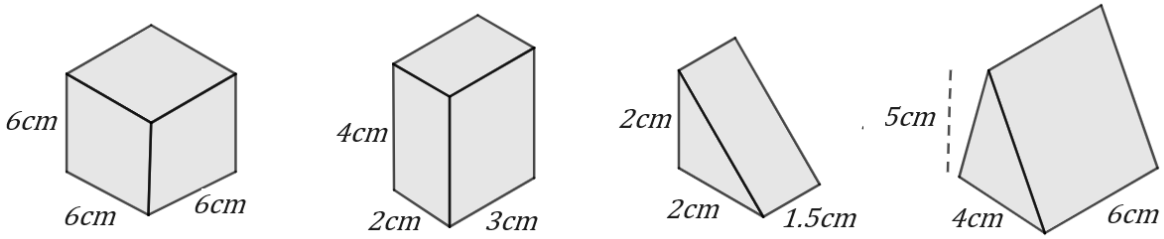
Volume of Prisms – www.m4ths – Steve Blades ©

(1) (a) What is the definition of a prism? (b) How do you calculate the volume of a prism?

(2) Is there any difference between volume and capacity of a prism?

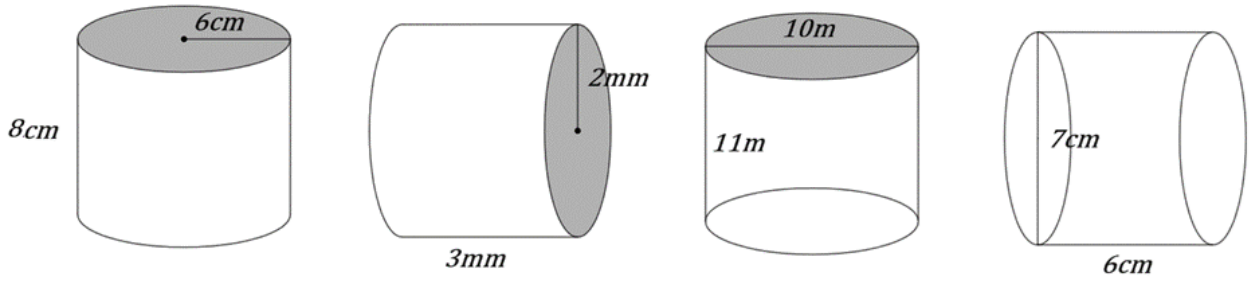
(3) (a) Name each prism below (b) Find the volume of each prism below showing workings and stating the units.



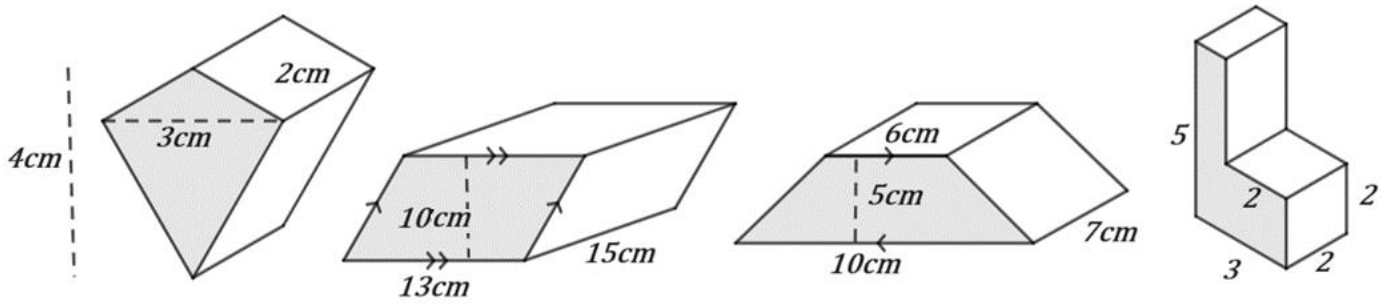
(4) (a) Name the prism shown below

(b) Find the volume of each prism stating the units on your answer. Give each answer in terms of π.

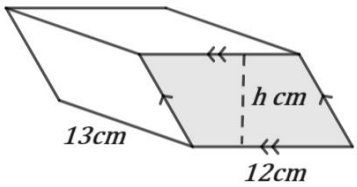
(c) Give each answer to 3 SF.



(5) Find the volume of each prism below

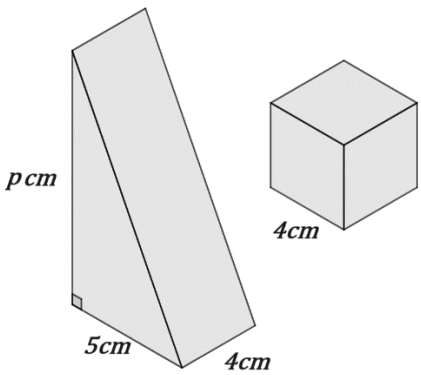


(6) The diagram below shows a prism with volume $1248cm^3$.



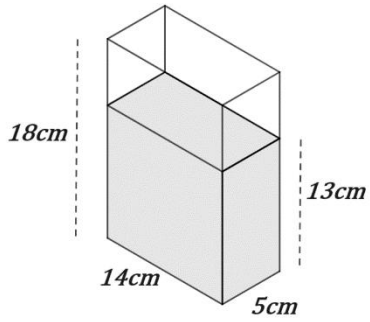
(a) Find the area of the shaded cross section. (b) Find the value of h.

(7) The diagram below shows a triangular prism and a cube. The volume of the triangular prism is TWICE that of the cube. Find the value of p.



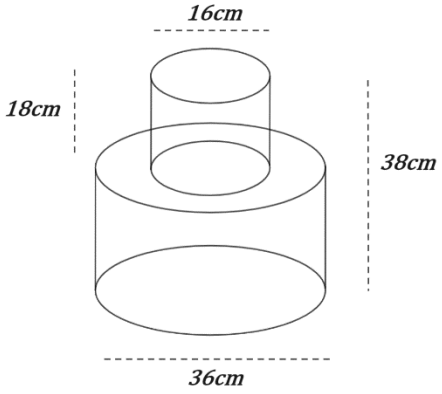
(8) (a) What is the relationship between cm^3 and ml? (b) How many ml are there in one litre?

(9) The diagram below shows a part filled tank in the shape of a cuboid. The tank is part filled from empty at a rate of $10ml$ per second.

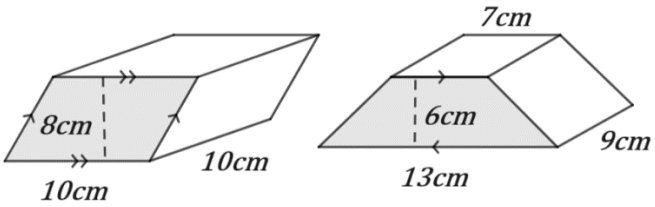


(a) How long did the tank take to fill to its current level shown? (b) How much longer will it take to fill the tank? (c) The full tank is then emptied at a rate of $8ml$ per second. Find the time taken for the tank to empty.

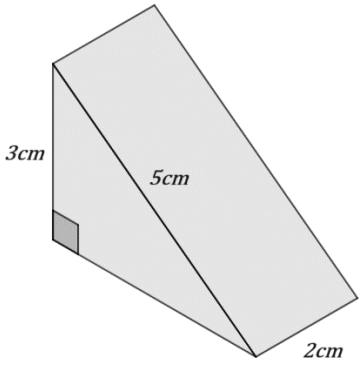
(10) The diagram below shows a tank made of two cylinders. The smaller cylinder has a hole in the bottom and water can pour through into the larger cylinder. The tank is filled from empty at a rate of 0.2 litres per minute. Find the time taken to fill the tank from empty.



(11) The diagram below shows two prisms. Find the ratio of the volumes of the prisms giving your answer in its simplest form.



(12) Show that the volume of the triangular prism below is $12cm^2$



(13) A cuboid has volume $24cm^3$. Each side length is an integer. What is the smallest possible area of any one face of the cuboid?