Volume Quiz #1: **Name:** KEY **Date:**

A. Complete the following showing all calculations. (2 marks each, total marks)

1. What is the volume of each right triangular prism?

a. Base of triangle = 3m
Height of triangle = 7 m
Height of prism = 8 m

$V = \frac{b \times h}{2} \times H$

$\frac{3 \times 7}{2} \times 8 =$ $84 m^3$

b. Base of triangle =15 cm
Height of triangle = 8 cm
Height of prism = 20cm

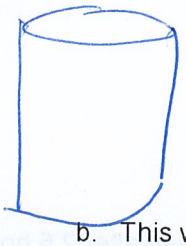
$\frac{15 \times 8}{2} \times 20$

$\frac{120}{2} \times 20 = 60 \times 20$

$= 1200 m^3$

B. Find the volume of the container, then calculate the volume of the contents.

a. You have a water tank that is cylindrical with a radius of 25 cm and a height of 120 cm. What is the volume of this cylinder?(2 marks)



$V = 3.14 \times 25 \times 25 \times 120 = 235,500 cm^3$

b. This water tank is only $\frac{2}{5}$ full of water. What is the volume of water that you have. You do know that 1 cc is equal to 1 ml.(2 marks)

$\frac{2}{5} = 0.4$ or 40%

$235,500 \times 0.4 = 94,200 cm^3$ or 94,200 ml

C. Fill in the blanks in the following table with the correct answer for the following Right Rectangular Prism.(2 marks each, total 6 marks) Do calculations neatly in the space provided.

Length(cm)	Width(cm)	Height(cm)	Volume(cm^3)
7	2	5	70
12	9	10	1080
16	15	5	1200

D. Fill in the blanks of the following table with the correct answer for the following Right Triangular Prism.(2 marks each, total 6 marks) Do calculations neatly in the space provided.

Base(cm)	Height of Triangle(cm)	Height of Prism(cm)	Volume(cm^3)
7	2	10	70
18	12	10	1080
20	14	5	700

Advanced Top Mark Question, for the real kids who want to be the "Masters".

A rectangular tank, 40m long by 30m wide is filled with 960 m^3 of water.

a. Determine the depth of the water.

$V = LWH$ $H =$

$V = 40 \times 30 \times H$

$960 = 1200 \times H$

$\frac{960}{1200} = H$ $H = 0.8m$

b. If the water drains out at a rate of 60 m^3/hr, how much water is left after 2.5 hours?

$60 \times 2.5 = 150m^3$ drained away.

$960 - 150 = 810m^3$ is left

↑ water in tank

c. What is the new depth of the water?

new volume of water.

area of rectangle → $LxWxH = 810$ ← new volume of water.

$40 \times 30 \times H = 810$ $H = 0.675m$ ← new depth.

$\frac{1200H}{1200} = \frac{810}{1200}$

d. Later, the depth of the water is 0.2m. For how long has the tank been draining?

$40 \times 30 \times 0.2 = V$

$240m^3 = V$

$960m^3 - 240m^3 = 720m^3$

↑ original volume of water ↑ new volume

$720m^3 \div 60m^3/hr$

$= 12$ hours