Worksheet 2015-7ℰN-00001(1)

(1) Convert the following to the unit as indicated in brackets:

(a) 84 mm^3 (cm^3)

$= 84 \div (10)^3 \ cm^3$

$= 84 \div 1000 \ cm^3$

$= 0{,}084 \ cm^3$

(b) 120 cm^3 (m^3)

$= 120 \div (100)^3 \ m^3$

$= 120 \div 1000000$

$= 0{,}00012 \ m^3$

(c) 2,5 m^3 (cm^3)

$= 2{,}5 \times (100)^3 \ cm^3$

$= 2{,}5 \times 1000000$

$= 2\,500\,000 \ cm^3$

(d) 15 mm^3 (m^3)

$= 15 \div (1000)^3 \ m^3$

$= 0{,}000000015 \ m^3$

(e) 6 789 cm^2 (mm^2) (2)

$= 6\,789 \times 10^2 \ mm^2$

$= 6\,789 \times 100$

$= 678\,900 \ mm^2$

(f) 2 m^3 (cm^3)

$= 2 \times (100)^3 \ cm^3$

$= 2 \times 1000000$

$= 2\,000\,000 \ cm^3$

(g) 0,35 m^3 (cm^3)

$= 0{,}35 \times (100)^3 \ cm^3$

$= 0{,}35 \times 1000000$

$= 350\,000 \ cm^3$

(h) 870 m^3 (cm^3)

$= 870 \times (100)^3 \ cm^3$

$= 870 \times 1000000$

$= 870\,000\,000 \ cm^3$

(i) 6 m^2 (cm^2) (2)

$= 6 \times (100)^2 \ cm^2$

$= 6 \times 10000$

$= 60\,000 \ cm^2$

$1 \ell = 1000 \ cm^3$

(2) Calculate how many liters each of the following volumes contain:

(a) 300 cm^3

$= 300 \div 1000 \ \ell$

$= 0{,}3 \ \ell$

(b) 7 m^3 (first convert to cm^3)

$= 7 \times (100)^3 \ cm^3$

$= 7\,000\,000 \ cm^3$

$= 7000 \ \ell$

$1 \ell = 1000 \ m\ell$

(3) Calculate how many milliliters each of the following volumes contain:

(a) 12 cm^3

$= 12 \div 1000 \ \ell$

$= 0{,}012 \ \ell$

$= 12 \ m\ell$

(b) 2 m^3 (first convert to cm^3)

$= 2 \times (100)^3 \ cm^3$

$= 2\,000\,000 \ cm^3$

$= 2000 \ \ell = 2\,000\,000 \ m\ell$

(4) Calculate the volume of the rectangular prisms with the following measurements:

(a) L = 5 cm ; B = 5 cm and H = 3 cm

$V = L \times B \times H$

$= (5\,cm) \times (5\,cm) \times (3\,cm)$

$= 75\,cm^3$

(b) L = 1,1 m ; B = 2 m and H = 3,5 m

$V = L \times B \times H$

$= (1{,}1\,m) \times (2\,m) \times (3{,}5\,m)$

$= 7{,}7\,m^3$

(c) L = 4 cm ; B = 75 mm and H = 3 cm

$B = 75\,mm = 7{,}5\,cm$

$\therefore V = L \times B \times H$

$= (4\,cm) \times (7{,}5\,cm) \times (3\,cm)$

$= 90\,cm^3$

$= 2{,}5\,m$

(d) L = 4 m ; B = 250 cm and H = 1 m

$L = 4\,m = 400\,cm$ and $H = 1\,m = 100\,cm$

$\therefore V = L \times B \times H$

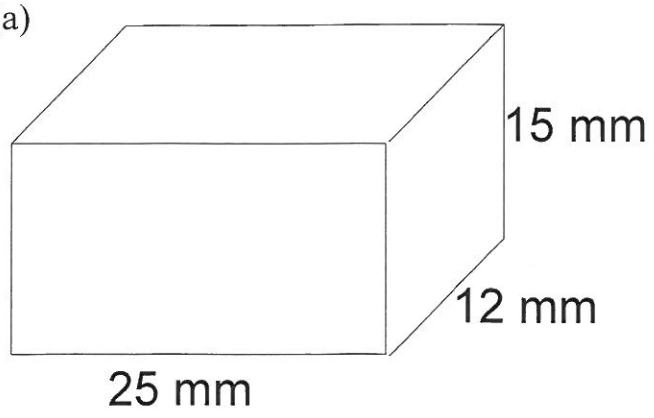
$= (400\,cm)(250\,cm)(100\,cm)$

$= 10\,000\,000\,cm^3$ or $V = (4m)(2{,}5m)(1m)$

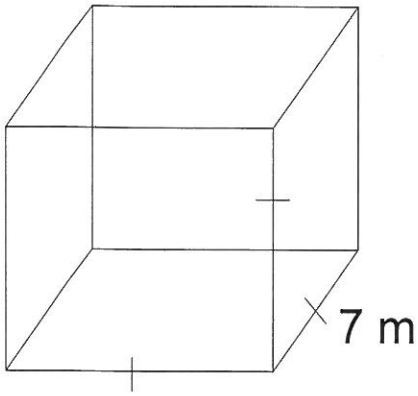
$= 10\,m^3$

(5) Calculate the volume of the following rectangular prisms:

(a)



(b)



$V = L \times B \times H$

$= (25\text{mm})(12\text{mm})(15\text{mm})$

$= 4\,500\ \text{mm}^3$

$V = L \times B \times H$

$= L \times L \times L$

$= L^3$

$= (7\text{m})^3$

$= 343\ \text{m}^3$