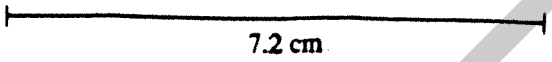
# Chapter 7 – METRIC CONVERSIONS (Linear, Area, Volume)

Linear measurement is a one dimensional measurement and is the measure of the length, distance, mass or capacity of a certain object. The units that we use are



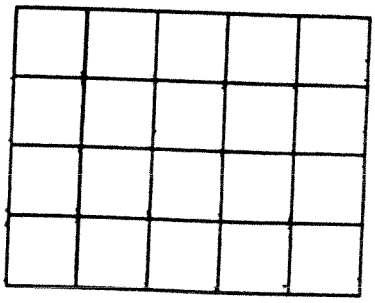

k h da (m, g, L) d c m

ex: Convert.

(1) 12.57 cm = _____dam
(2) 4.56342 km = _____dm
(3) 1.2 g = _____kg
(4) 0.456 hl = _____cl

Area is a two dimensional measurement and is the measurement of the surface inside a closed figure. The units that we use are:

$km^2$ $hm^2$ $dam^2$ $(m^2)$ $dm^2$ $cm^2$ $mm^2$




Ex: Convert.

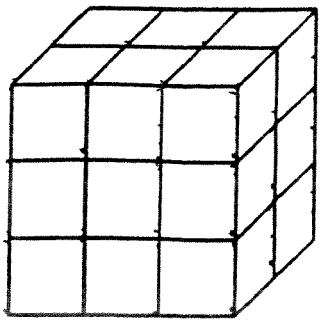
(1) 12.57 $cm^2$ = _____$dam^2$
(2) 4.56342 $km^2$ = _____$dm^2$
(3) 1.2 $m^2$ = _____$dm^2$
(4) 0.456 $hm^2$ = _____$km^2$

Volume is a three dimensional measurement and is the measure of the amount of space an object occupies. The units that we use are:

$Km^3$ $hm^3$ $dam^3$ $(m^3)$ $dm^3$ $cm^3$ $mm^3$

Ex: Convert.

(1) 12.57 $cm^3$ = _____$dam^3$
(2) 4.56342 $km^3$ = _____$dm^3$
(3) 1.2 $m^3$ = _____$dm^3$
(4) 0.456 $hm^3$ = _____$km^3$



# Convert to Capacity

$1 cm^3 = 1 mL$ $1 dm^3 = 1 L$

1) $14.62\ dm^3 =$ _____ L

2) $0.132789\ m^3 =$ _____ L

3) $12543.5\ mm^3 =$ _____ mL

4) $0.0369\ dm^3 =$ _____ mL

# Chapter 10: Surface Area of 3D Objects

Total Surface Area is _____

_____

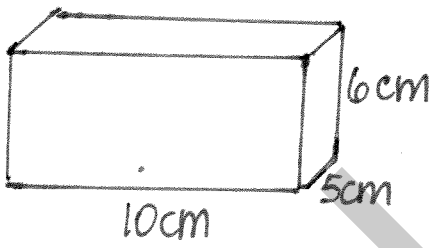
Lateral Surface Area is _____

_____

To calculate the total surface area, we use:

$$A_{Lateral} + A_{Bases} = A_{Total}$$

## Surface Area of a Rectangular Prism

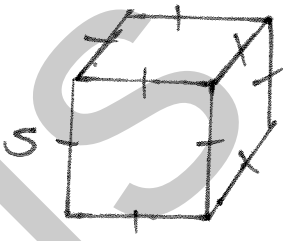



$$A_l = P_b \times h$$

$$A_T = 2A_B + A_l$$

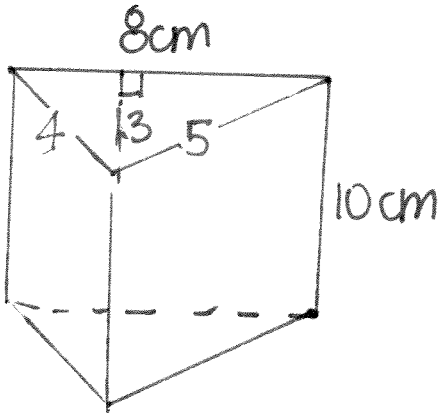
$$=$$

## Surface Area of a CUBE



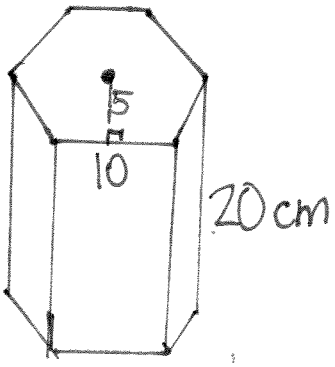

$$A_T =$$

# Surface Area of a triangular prism



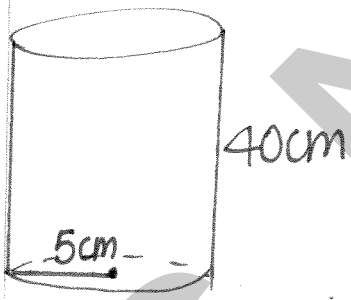

$$A_T = 2A_B + A_L$$

# Surface Area of Hexagonal Prism



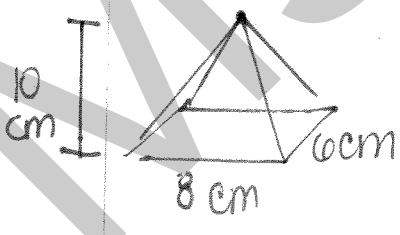

$$A_T = 2A_B + A_L$$

# Surface Area of a cylinder



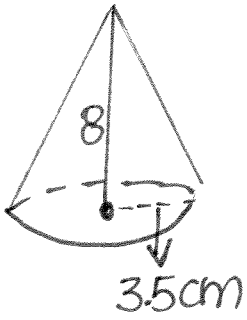

$$A_T = 2A_B + A_L$$

# Surface Area of a Pyramid



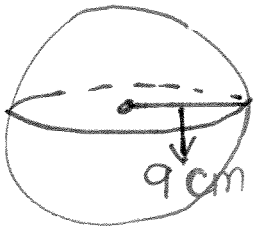

$$A_T = A_B + A_L$$

# Surface Area of Cone




$A_T = A_B + A_L$

# Surface Area of a Sphere

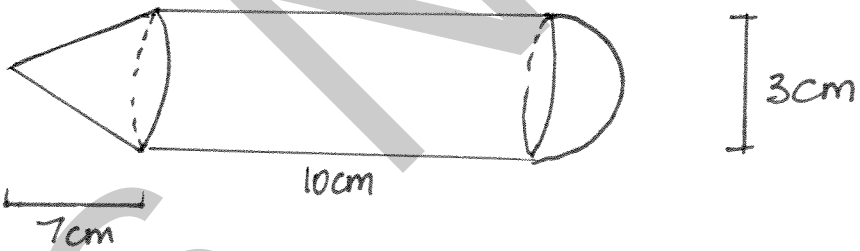



$A_T = 4\pi r^2$

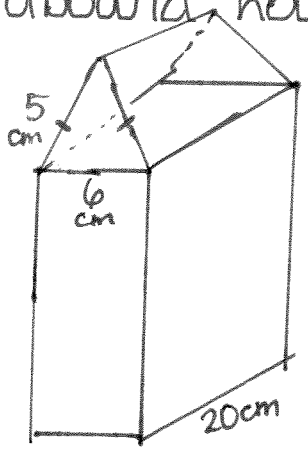
* Hemisphere $A_T = 3\pi r^2$

# Decomposable Solids

1) Find total surface area



2) Find the cost for painting this entire cardboard house if 1 bucket costs 10$/5cm²



## Area and Volume Backwards

1. The volume of a rectangular prism is 120$cm^3$. The height is 6 cm, the width is 30 cm. Find the length.

2. The volume of a square based pyramid is 56.52 $cm^2$. If the height is 6 cm, a) find the area of the base, b) find the side measure of the base.

3. The height of a cone is 60 cm and volume is 300 $cm^3$.
   A) Find the area of the base, b) find the radius.

4. The volume of a hemisphere is 261.7 $cm^3$. Find the radius.