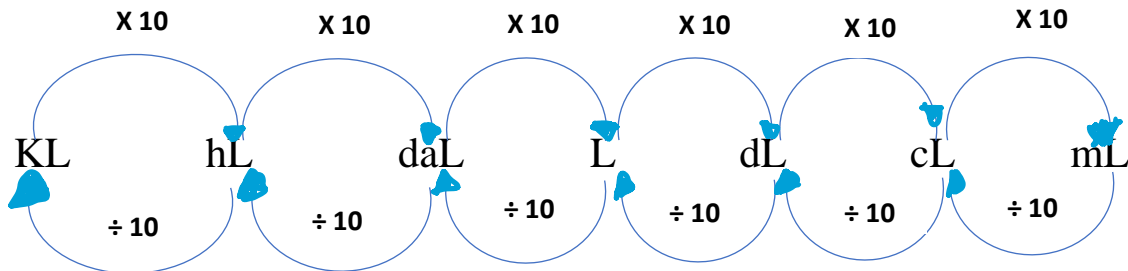## Capacity

(a) The amount of liquid a container can hold is called capacity.

(b) The standard unit of capacity is **litre (L).**

(c) To change from higher unit to lower unit, we multiply each step by 10.

X 10	X 10	X 10	X 10	X 10	X 10
KL	hL	daL	L	dL	cL	mL
÷ 10	÷ 10	÷ 10	÷ 10	÷ 10	÷ 10

(d) To change from lower to higher units , we divide each step by 10.

(e) Kilolitre , Hectolitre and Decalitre are higher units.

(f) Decilitre , Centilitre and Millilitre are lower units.

Important Relationships

1 kL = 1000 L

1 hL = 100 L

1 daL = 10 L

$1 \text{ mL} = \dfrac{1}{1000} \text{ L} = 0.001 \text{ L}$

$1 \text{ cL} = \dfrac{1}{100} \text{ L} = 0.01 \text{ L}$

$1 \text{ dL} = \dfrac{1}{10} \text{ L} = 0.1 \text{ L}$

Self Practice 11C

1. Fill in the blanks.

   (a) 7 L   = _____ mL

   (b) 235 dL   = _____ daL

   (c) 18 kL   = _____ daL

   (d) 4468 L   = _____ kL

   (e) 7.854 kL = _____ L

   (f) 120 hL   = _____ dL

   (g) 3.8 L   = _____ dL

   (h) 137.3 cL   = _____ dL

Solution 1:-

(a) $7L = $ _____ mL

$1L = 1000 \, mL$

$7L = 7 \times 1000 \, mL$

$= 7000 \, mL$

(b) $235 \, dL = $ _____ daL

$1 \, dL = \frac{1}{100} \, daL$

$235 \, dl = \frac{235}{100} \, daL$

$= 2.35 \, daL$

(c) $18 \, KL = $ _____ daL

$1 \, KL = 100 \, daL$

$18 \, KL = 18 \times 100 \, daL$

$= 1800 \, daL$

(e) $7.854 \, KL = $ _____ L

$1 \, KL = 1000 \, L$

$7.854 \, KL = 7.854 \times 1000 \, L$

$= 7854 \, L$

(h) $137.3 \, cL = $ _____ dL

$1 \, cL = \frac{1}{10} \, dL$

$137.3 \, cL = \frac{137.3}{10} \, dL$

$= 13.73 \, dL$

In Q1. (d) , (f) and (g) are homework.

2. State true (T) or false (F) for the following statements.

(a) 1 kilolitre = 1000 millilitre **F**

(b) 1 litre = 100 centilitres **T**

(c) 1 decilitre = $\dfrac{1}{100}$ litre **F**

(d) 1 hectolitre = $\dfrac{1}{10}$ kilolitre **T**

(e) 1 decalitre = 100 decilitres **T**

(f) 1000 millilitres = 1 litre **T**

(g) 1 centilitre = 100 litres **F**

(h) 1 litre = $\dfrac{1}{1000}$ kilolitres **T**

3. Express in L, dL, cL and mL.

(a) 132.598 L = _____ L _____ dL _____ cL _____ mL

(b) 0.407 L = _____ L _____ dL _____ cL _____ mL

Solution 3:-

(a) $132.598\,L =$ ___ L ___ dL ___ cL ___ mL

$= 132L + 0.5L + 0.09L + 0.008L$

$= 132L + 0.5 \times 10\,dL + 0.09 \times 100\,cL + 0.008 \times 1000\,mL$
$\begin{cases} \because 1L = 10dL \\ \because 1L = 100cL \\ 1L = 1000mL \end{cases}$

$= 132L + 5dL + 9cL + 8mL$

Ans⟹ $132L\ \ 5dL\ \ 9cL\ \ 8mL$

In Q3. (b) is homework.

4. Using decimal notation, express in litres.

(a) 22 L 4 dL 8 cL = _____ L   (b) 88 L 9 mL   = _____ L

(c) 2 dL 8 mL   = _____ L   (d) 415 L 3 cL 5 mL = _____ L

Solution 4:-

(a) 22 L 4 dL 8 cL = _____ L

$$= 22 L + 4 dL + 8 cL$$

$$= 22 L + \frac{4}{10} L + \frac{8}{100} cL \qquad \left[\because 1 dL = \frac{1}{10} L \\ \quad 1 cL = \frac{1}{100} L \right]$$

$$= 22 L + 0.4 L + 0.08 cL$$

$$= 22.48 L$$

(c) 2 dL 8 mL

$$= \frac{2}{10} L + \frac{8}{1000} L \qquad \left[\because 1 dL = \frac{1}{10} L \\ \quad 1 mL = \frac{1}{1000} L \right]$$

$$= 0.2 L + 0.008 L = 0.208 L$$

> **In Q4. (b) and (d) are homework.**

5. A bottle can store 1.23 L of water. This is same as _____ millilitres.

Solution 5:-

1.23 L = _____ mL

∵ 1 L = 1000 mL

1.23 L = 1.23 × 1000 mL

= 1230 mL

6. A huge water tank can store 15000 litres of water for the entire society. Its capacity in kilolitres is _____ .

Solution 6:-

This question is homework.

7. Rehman used 2030 mL of cooking oil in a month. The oil used by him in litres is _____ .

Solution 7:-

$$2030 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$$

$$1 \text{ mL} = \frac{1}{1000} \text{ L}$$

$$2030 \text{ mL} = \frac{2030}{1000} \text{ L}$$

$$= 2.030 \text{ L}$$

Self Practice-11 D and 11E are omitted