

## Chapter 11: Problems on Measurement

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### PROBLEM SET 46 [PAGE 64]

#### Problem Set 46 | Q 1.1 | Page 64

Add :

₹ 9, 50 paise + ₹ 14, 60 paise

#### SOLUTION

₹	Paise	
1		
9	50	50 paise + 60 paise
+ 14	60	= 110 paise
24	10	= 1 ₹ 10 paise

∴ ₹ 24,10 paise.

#### Problem Set 46 | Q 1.2 | Page 64

Add :

6 cm 5 mm + 7 cm 9 mm

#### SOLUTION

cm	mm	
1		
6	5	5 mm + 9 mm = 14 mm
+ 7	9	
14	4	14 mm = 1 cm 4 mm

∴ 14 cm 4 mm.

#### Problem Set 46 | Q 1.3 | Page 64

Add :

22 m 50 cm + 25 m 75 cm

#### SOLUTION

m	cm	
1		

2 2	5 0	
+ 2 5	7 5	50 cm + 75 cm = 125 cm
4 8	2 5	= 1 m 25 cm

∴ 48 m 25 cm.

#### Problem Set 46 | Q 1.4 | Page 64

**Add :**

15 km 740 m + 13 km 950 m

#### **SOLUTION**

km	m	
1		
1 5	7 4 0	740 m + 950 m = 1690 m
+ 1 3	9 5 0	1690 m = 1 km 690 m
2 9	6 9 0	

∴ 29 km 690 m.

#### Problem Set 46 | Q 1.5 | Page 64

**Add :**

25 kg 650 g + 29 kg 770 g

#### **SOLUTION**

kg	gm	
1		
2 5	6 5 0	650 gm + 770 gm
+ 2 9	7 7 0	= 1420 gm
5 5	4 2 0	= 1 kg 420 gm

∴ 55 kg 420 gm.

#### Problem Set 46 | Q 1.6 | Page 64

**Add :**

19 l 840 ml + 25 l 250 ml

#### **SOLUTION**

l	ml	
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1 1		
1 9 + 2 5	8 4 0 2 5 0	840 ml + 250 ml = 1090 ml = 1 l + 90 ml
4 5	0 9 0	

∴ 45 l 90 ml.

#### Problem Set 46 | Q 2.1 | Page 64

**Subtract :**

₹ 19, 50 paise - ₹ 12, 60 paise

#### **SOLUTION**

₹	Paise	
18	150	
<del>19</del> - 12	<del>50</del> 60	We cannot subtract 60 paise from 50 paise. To convert 1 ₹ into 100 paise.
6	90	

∴ ₹ 6, 90 paise.

#### Problem Set 46 | Q 2.2 | Page 64

**Subtract :**

24 cm 2 mm - 3 cm 8 mm.

#### **SOLUTION**

cm	mm	
2 3	1 2	
<del>24</del> - 3	<del>2</del> 8	We cannot subtract 8 mm from 2 mm. So, convert 1 cm = 10 mm
2 0	4	

∴ 20 cm 4 mm.

#### Problem Set 46 | Q 2.3 | Page 64

**Subtract :**

$$20 \text{ m } 30 \text{ cm} - 17 \text{ m } 60 \text{ cm}$$

**SOLUTION**

m	cm	
19	130	
<del>20</del> - 17	<del>30</del> 60	We cannot subtract 60 cm from 30 cm. So, convert 1 m = 100 cm
2	70	

∴ 2 m 70 cm.

**Problem Set 46 | Q 2.4 | Page 64**

**Subtract :**

$$40 \text{ km } 255 \text{ m} - 17 \text{ km } 960 \text{ m}$$

**SOLUTION**

km	m	
39	1225	
<del>40</del> - 17	<del>225</del> 960	We cannot subtract 960 m from 225 m. So, convert 1 km = 1000 m
22	265	

∴ 22 km 265 m.

**Problem Set 46 | Q 2.5 | Page 64**

**Subtract :**

$$35 \text{ kg } 150 \text{ g} - 26 \text{ kg } 470 \text{ g}$$

**SOLUTION**

kg	gm	
34	1150	
<del>35</del> - 26	<del>150</del> 470	We cannot subtract 470 gm from 150 gm. So, convert 1 kg = 1000 gm.
8	680	

∴ 8 kg 680 gm.

**Problem Set 46 | Q 2.6 | Page 64****Subtract :**

46 l 200 ml - 38 l 750 ml

**SOLUTION**

l	ml	
45	1200	
46	<del>200</del>	We cannot subtract 750 ml from 200 ml; So, convert 1 l = 1000 ml
- 38	750	
7	450	

∴ 7 l 450 ml.

**PROBLEM SET 47 [PAGES 66 - 67]****Problem Set 47 | Q 1 | Page 66**

For his birthday, Ajay gave 20 l 450 ml of milk to the children in an Ashramshala and 28 l 800 ml to the children in an orphanage. How much milk did Ajay donate?

**SOLUTION**

l	ml	
1		
20	450	450 ml + 800 ml = 1250 ml = 1 l + 250 ml
+ 28	800	
49	250	

∴ Ajay donated 49 l 250 ml milk.

**Problem Set 47 | Q 2 | Page 66**

Under the Rural Cleanliness Mission, college students cleaned 1 km 750 m of a village road that is 2 km 575 m long. How much remained to be cleaned?

**SOLUTION**

km	m	
1	1575	
<del>2</del>	<del>575</del>	750 m cannot be subtracted from 575 m. So, convert 1 km = 1000 m.
- 1	750	
0	825	

∴ 825 m remained to be cleaned.

**Problem Set 47 | Q 3 | Page 66**

Babhulgaon used 21,250 litres of treated wastewater in the fields. Samvatsar used 31,350 litres of similar water. How much treated wastewater was used in all?

**SOLUTION**

$$\begin{array}{r} 21250 \text{ litres Babhulgaon used} \\ + 31350 \text{ litres Samvatsar used} \\ \hline 52600 \end{array}$$

∴ 52,600 litres of wastewater used in all.

**Problem Set 47 | Q 4 | Page 66**

If half a litre of milk costs 22 rupees, how much will 7 litres cost?

**SOLUTION**

$$\frac{1}{2} + \frac{1}{2} = \frac{1+1}{2} = \frac{2}{2} = 1 \text{ litre}$$

$$22 + 22 = ₹ 44$$

That is, 1 litre costs ₹ 44

$$\therefore 7 \text{ litres costs } 44 \times 7 = ₹ 308$$

∴ 7 litres costs ₹ 308.

**Problem Set 47 | Q 5 | Page 66**

If the speed of a motorcycle is 40 km per hour, how far will it travel in an hour and a quarter?

**SOLUTION**

$$\text{Hour and quarter} = 1 + \frac{1}{4} \text{ hours}$$

$$= 40 \text{ km} + \frac{1}{4} \times 40 \text{ km}$$

$$= 40 \text{ km} + 10 \text{ km}$$

$$= 50 \text{ km}$$

∴ Motorcycle will travel in an hour and a quarter 50 km.

**Problem Set 47 | Q 6 | Page 66**

If a man walks at a speed of 4 kmph, how long will it take him to walk 3 km?

**SOLUTION 1**

1 km = 1000 m

4 km in 1 hour, 4 km in 60 minutes

That is

2 km in 30 minutes  
 + 1 km in 15 minutes  
3 km in 45 minutes.

**SOLUTION 2**

kg	gm	
4 0	3 0 0	Total weight
- 3 1	1 0 0	weight of potato and cabbage.
9	2 0 0	

∴ The weight of onions is 9 kg 200 gm.

**Problem Set 47 | Q 7 | Page 66**

If a rickshaw travels at a speed of 30 kmph, how far will it travel in three-quarters of an hour?

**SOLUTION**

30 kmph means

In 60 minutes 30 km and 30 minutes 15 km and 15 minutes

$$\frac{15}{2} = \frac{15 \times 5}{2 \times 5} = \frac{75}{10} = 7.5 \text{ km.}$$

∴ In 45 minutes 15 km + 7.5 km = 22.5 km.

**Problem Set 47 | Q 8 | Page 66**

During Cleanliness Week, children cleaned the public park in their town. They collected three-quarter kilograms of plastic bags and five and a half kilograms of other garbage. How much garbage did they collect in all?

**SOLUTION**

$$1 \text{ kg} = 1000 \text{ gm}$$

$$\text{So, } \frac{1}{4} \text{ kg} = \frac{1000}{4} = 250 \text{ gm}$$

$$\text{Three quarters} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

$$= 250 + 250 + 250$$

$$= 750 \text{ gm}$$

$$\begin{array}{r} 250 \\ 4 \overline{)1000} \\ \underline{-8} \phantom{00} \\ 20 \\ \underline{-20} \phantom{00} \\ 00 \end{array}$$

kg	gm	
+ 5	7 5 0 5 0 0	Plastic Garbage
5 5 + <u>1</u>	<u>1</u> 2 5 0 2 5 0	

∴ 6 kg 250 gm.

**Problem Set 47 | Q 9 | Page 66**

If one shirt needs 2 m 50 cm of cloth, how much cloth do we need for 5 shirts?

**SOLUTION**

m	cm
2	50
×	5
10	(2) 50
10 + 2	50
12	50



$$250 \text{ cm} = 200 \text{ cm} + 50 \text{ cm}$$

$$= 2 \text{ m} + 50 \text{ cm}$$

$\therefore$  12 m 50 cm cloth need.

### Problem Set 47 | Q 10 | Page 66

If a car travels 60 km in an hour, how far will it travel in

1. 2 hours?
2. 15 minutes?
3. half an hour?
4. three and a half hours?

### **SOLUTION**

60 kmph

In 60 minutes 60 km

Hence, 1 minute 1 km

1. 2 hours =  $2 \times 60 = 120 \text{ km}$
2. In 15 minutes = 15 km
3. In half an hour  $60 \div 2 = 30 \text{ km}$
4. In three and half hours =  $3 \times 60 + 30$   
 $= 180 + 30$   
 $= 210 \text{ km}$

- $\therefore$
1. 120 km
  2. 15 km
  3. 30 km
  4. 210 km.

### Problem Set 47 | Q 11 | Page 66

If one gold bangle is made from 12 grams 250 milligrams of gold, how much gold will be needed to make 8 such bangles? (1000 mg = 1 g).

### **SOLUTION**

gram	milligram
12	250
$\times$	8
96	2000
$96 + 2$	000
98	000

$\therefore$  98 grams of gold needed.

### Problem Set 47 | Q 12 | Page 66

How many pouches of 20 g cloves each can be made from 1 kg 240 g of cloves?

**SOLUTION**

$$1 \text{ kg } 240 \text{ gm} = 1000 \text{ gm} + 240 \text{ gm}$$

$$= 1240 \text{ gm}$$

$$\begin{array}{r} 62 \\ 20 \overline{)1240} \\ - 120 \phantom{0} \\ \hline 40 \\ - 40 \\ \hline 00 \end{array}$$

∴ 62 pouches can be made.

**Problem Set 47 | Q 13 | Page 66**

Seema's mother bought 2m 70 cm of cloth for a kurta and 2 m 40 cm for a shirt. How much cloth did she buy in all?

**SOLUTION**

$$70 \text{ cm} + 40 \text{ cm} = 110 \text{ cm} = 1 \text{ m } 10 \text{ cm}$$

m	cm	
1		
2	70	cloth for Kurta
+ 2	40	cloth for Shirt
5	10	

∴ 5 m 10 cm cloth in all.

**Problem Set 47 | Q 14 | Page 66**

A water tank holds 125 l of water. If 97 l 500 ml of the water is used, how much water remains in the tank?

**SOLUTION**

$$1 \text{ litre} = 1000 \text{ ml}$$

l	ml	
124	1000	

4 2 5	0 0 0	water tank holds
- 9 7	5 0 0	water used
2 7	5 0 0	water remain

∴ 27 l 500 ml water remains in the tank.

#### Problem Set 47 | Q 15 | Page 66

Harinder bought 57 kg 500 g of wheat from one shop and 36 kg 800 g of wheat from another shop. How much wheat did he buy altogether?

#### SOLUTION

kg	gm	
5 7	5 0 0	bought from 1 shop
+ 3 6	8 0 0	bought from another shop
9 3	① 3 0 0	500 + 800 = 1300 gm
1		= 1000 + 300
9 4	3 0 0	= 1 kg 300 gm

∴ 94 kg 300 gm bought all together.

#### Problem Set 47 | Q 16 | Page 66

Renu took part in a 100 m race. She tripped and fell after running 80 m 50 cm. How much distance did she have left to run?

#### SOLUTION

m	cm	
9 9	1 0 0	Borrow 1 m = 100 cm So, 100 m = 99 m + 100 cm
1 0 0	0 0	Total distance to run
- 8 0	5 0	Distance covered
1 9	5 0	Distance left to run

∴ 19 m 50 cm distance left to run.

#### Problem Set 47 | Q 17 | Page 67

A sack had 40kg of 300 grams of vegetables. There were 17 kg 700 g potatoes, 13 kg 400 g cabbage and the rest were onions. What was the weight of the onions?

**SOLUTION**

kg	gm	
17	700	potatoes
+ 13	400	cabbage
30	①100	
1		
31	100	

kg	gm	
40	300	Total weight
- 31	100	weight of potato and cabbage
9	200	

∴ The weight of onions is 9 kg 200 gm.

**Problem Set 47 | Q 18 | Page 67**

One day, Gurminder Singh walked 3 km 750 m and Parminder Singh walked 2 km 825 m. Who walked farther and by how much?

**SOLUTION**

km	m	
2	1750	1 km = 1000 m borrowed
3	<del>750</del>	Gurminder walked
- 2	825	Parminder walked
0	925	

∴ Gurminder walked more by 925 metres.

**Problem Set 47 | Q 19 | Page 67**

Suresh bought 3kg 250 g of tomatoes, 2 kg 500 g of peas, and 1 kg 750 g of cauliflower. How much was the total weight of the vegetables he bought?

### SOLUTION

kg	gm	
3	250	tomatoes
+ 2	500	peas
+ 1	750	cauliflower
6	①500	
6+1←	500	
7	500	

∴ Total weight 7 kg 500 gm.

### Problem Set 47 | Q 20 | Page 67

Jalgaon, Bhusawal, Akola, Amravati, and Nagpur lie serially on a certain route. The distances between Akola and these other places are given below. Use them to make word problems and solve the problems.

Amravati - 95 km, Bhusawal - 154 km, Nagpur - 249 km, Jalgaon - 181 km.

### SOLUTION

1. What is the distance between Bhusawal and Nagpur?  
 $249 \text{ km} - 154 \text{ km} = 95 \text{ km}$   
∴ The distance between Bhusawal and Nagpur is 95 km.
2. What is the distance between Amravati and Jalgaon?  
 $181 \text{ km} - 95 \text{ km} = 86 \text{ km}$   
∴ The distance between Amravati and Jalgaon is 86 km.

### Problem Set 47 | Q 21 | Page 67

Complete the following table and prepare the total bill.

Foodstuff	Weight (kg)	Rate (₹ per kg)	Cost
Sugar	2.5	32	
Rice	4.0	35	
Chana Dal	1.5	60	
Toor Dal	3.0	70	
Wheat	7.0	21	
Oil	1.5	110	
Total			

**SOLUTION**

Foodstuff	Weight (kg)	Rate (₹ per kg)	Cost	
Sugar	2.5	32	2.5 x 32	80.00
Rice	4.0	35	35 x 4	140.00
Chana Dal	1.5	60	1.5 x 60	90.00
Toor Dal	3.0	70	70 x 3	210.00
Wheat	7.0	21	21 x 7	147.00
Oil	1.5	110	110 x 1.5	165.00
			<b>Total</b>	832.00