

## Learning objectives

- |  |                                    |
|--|------------------------------------|
| 4.1 Measurement                        | 4.2 Standard Units of Measurements |
| 4.3 Measuring Units and Decimal System | 4.4 Time                           |
| 4.5 Temperature                        | 4.6 Money                          |

## 4.1 MEASUREMENT

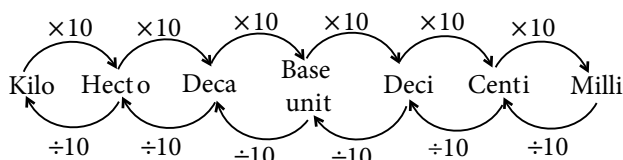
Measurement of objects means measuring how long, heavy and how much capacity of an object is.

## 4.2 STANDARD UNITS OF MEASUREMENTS

- Measuring units of lengths are cm, m and km. Small lengths are measured in cm and large lengths are measured in m and km.
- Measuring units of weights are g and kg. Small weights are measured in g and large weights are measured in kg.
- Measuring units of capacity are mL and L. Small capacity are measured in mL and large capacity are measured in L.

Description	Lengths	Weights	Capacity
<b>Higher units</b>	Kilometre (km) Hectometre (Hm) Decametre (dam)	Kilogram (kg) Hectagram (hg) Decagram (dag)	Kilolitre (kL) Hectolitre (hL) Decalitre (dal)
<b>Standard units (Base unit)</b>	Metre (m)	Gram (g)	Litre (L)
<b>Lower units</b>	Decimetre (dm) Centimetre (cm) Millimetre (mm)	Decigram (dg) Centigram (cg) Milligram (mg)	Decilitre (dL) Centilitre (cL) Millilitre (mL)

## Conversion of Units



## Olympiad Bite

Some more units of measurements are as follows:

**Length**

Inch, Foot, Yard

1 inch = 2.54 cm, 1 foot = 12 inches

1 yard = 36 inches

**Weight**

Ounce, Pound, Ton

1 ounce = 28 gram (approx.)

1 pound = 16 ounces

1 ton = 2000 pounds

## 4.3 MEASURING UNITS AND DECIMAL SYSTEM

Let's learn this section through the help of examples.

- Convert : 5 km 854 m into km.
 
$$\begin{aligned}
 5 \text{ km } 854 \text{ m} &= 8 \text{ km} + 854 \text{ m} \\
 &= 8 \text{ km} + \frac{854}{1000} \text{ km} \\
 &= 8 \text{ km} + 0.854 \text{ km} \\
 &= 8.854 \text{ km}
 \end{aligned}$$
- Convert : 9 kg 58 g into kg.
 
$$\begin{aligned}
 9 \text{ kg } 58 \text{ g} &= 9 \text{ kg} + 58 \text{ g} \\
 &= 9 \text{ kg} + \frac{58}{1000} \text{ kg} \\
 &= 9 \text{ kg} + 0.058 \text{ kg} \\
 &= 9.058 \text{ kg}
 \end{aligned}$$

- Convert : 11 L 585 mL into L.  
 $11 \text{ L } 585 \text{ mL} = 11 \text{ L} + 585 \text{ mL}$   
 $= 11 \text{ L} + \frac{585}{1000} \text{ L}$   
 $= 11 \text{ L} + 0.585 \text{ L}$   
 $= 11.585 \text{ L}$

### ADDITION AND SUBTRACTION

- If the length of two clothes are 18 m 50 cm and 15 m 20 cm respectively, then the total length of both clothes are:  
 $18 \text{ m } 50 \text{ cm} + 15 \text{ m } 20 \text{ cm}$   
 $= 18.50 \text{ m} + 15.20 \text{ m}$   
 $= 33.70 \text{ m}$  or 33 m 70 cm
- Rohit bought 4 kg 520 g of fruits and Ravi bought 3 kg 315 g of fruits. How much more weight of fruits did Rohit buy than Ravi?  
 Weight of fruits Rohit bought  
 $= 4 \text{ kg } 520 \text{ g} = 4.520 \text{ kg}$

Weight of fruits Ravi bought  
 $= 3 \text{ kg } 315 \text{ g} = 3.315 \text{ kg}$   
 Required difference  $= (4.520 - 3.315) \text{ kg}$   
 $= 1.205 \text{ kg}$  or 1 kg 205 g

- A water tank in a college contains 15000 L of water. Each student drink 5000 mL of water in a day. If there are 800 students in a college, then how much water left in the tank after 1 day?  
 Quantity of water in tank  $= 15000 \text{ L}$   
 Quantity of water each student drinks in 1 day  
 $= 5000 \text{ mL} = 5 \text{ L}$   
 Number of students in college  $= 800$   
 Quantity of water used by students in 1 day  
 $= 800 \times 5 = 4000 \text{ L}$   
 So, amount of water left in the tank  
 $= (15000 - 4000) \text{ L} = 11000 \text{ L}$

## SELF TEST - 1

1. If one boy is 450 cm high and another boy is 540 cm high, then find the difference between their heights.

- (A) 120 cm                      (B) 110 cm  
 (C) 150 cm                      (D) 90 cm

2. Convert 5 cm 7 mm into mm.

- (A) 75 mm                      (B) 57 mm  
 (C) 507 mm                      (D) 570 mm

3. Compare and fill the box.

5 L 60 mL - 2L 30 mL  6 L 40 mL - 5 L 105 mL

- (A) >                                      (B) <  
 (C) =                                      (D) Can't be determined

4. A basket contains 5400 g of mangoes. Which of the following options correctly represents the same weight as of mangoes?

- (A) 504 kg                      (B) 5 kg 40 g  
 (C) 5 kg 400 g                      (D) 54 kg

5. If the quantity of water in a glass is 150 mL, then how much water does 18 such glasses contain?

- (A) 2700 mL                      (B) 2100 mL  
 (C) 3500 mL                      (D) 3400 mL

### 4.4 TIME

#### Conversion of Time

- **Days into Hours :** There are 24 hours in a day. So, to convert days into hours multiply the number of days by 24.  
 For example : Convert 8 days into hours.  
 $8 \text{ days} = (24 \times 8) \text{ hours} = 192 \text{ hours}$
- **Hours into Days :** To convert hours into days, divide the number of hours by 24.  
 For example : How many days will have 48 hours?  
 $48 \text{ hours} = (48 \div 24) \text{ days} = 2 \text{ days}$
- **Hours into Minutes :** There are 60 minutes in an hour. So, to convert hours into minutes, multiply

the number of hours by 60.

For example : How many minutes does 8 hours have?

$8 \text{ hours} = (8 \times 60) \text{ minutes} = 480 \text{ minutes}$

- **Minutes into Hours :** To convert minutes into hours, divide the number of minutes by 60.

For example : Convert 240 minutes into hours.

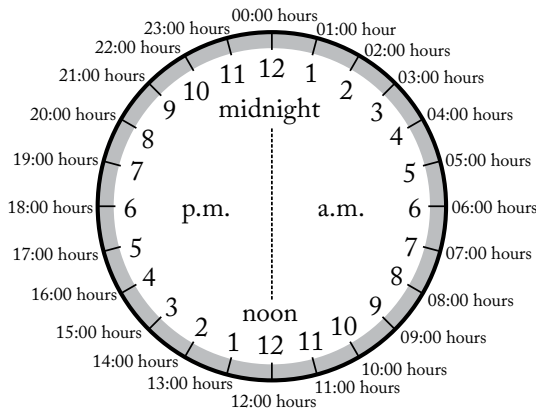
$240 \text{ minutes} = (240 \div 60) \text{ hours} = 4 \text{ hours}$



#### Olympiad Bite

- 1 minute = 60 seconds
- 1 hour =  $60 \times 60 = 3600$  seconds

## 24 hour Clock



### Converting 12-hour clock time into 24-hour clock time

- For a.m. timings, remove a.m. and write the hours as a 2-digit number.
- For p.m. timings, add 12 to the hours and then write hours and minutes together. For example :  
 5:00 p.m. = 17:00 hours  
 6:30 p.m. = 18:30 hours  
 05:00 a.m. = 05:00 hours

### Converting 24-hour clock time into 12-hour clock time

- When less than 12:00 hours are shown, then just replace hours with a.m.
- When more than 12 : 00 hours are shown, then subtract 12 from the two digit on the left and write p.m. with resulting time. For example :  
 15:00 hours = 03:00 p.m.  
 04:00 hours = 4:00 a.m.

## 4.5 TEMPERATURE

Temperature is a measure of the warmth or coldness of an object. Thermometer are used to measure thermometer.

Temperature is measured in degrees. The two scales used to measure temperature are Celsius ( $^{\circ}\text{C}$ ) and Fahrenheit ( $^{\circ}\text{F}$ ).

## 4.6 MONEY

### Conversion of Money

- To convert paise into Rupees, divide the given amount by 100.
- To convert Rupees into paise, multiply the given amount by 100.

### Unitary Method

Unitary method is a way to find the value of required number of units by finding the value of one unit.

For example :

If the cost of 8 caps is ₹ 120, then find the cost of 15 such caps.

Cost of 8 caps = ₹ 120

Cost of 1 cap = ₹  $(120 \div 8) = ₹ 15$

$\therefore$  Cost of 15 such caps = ₹  $15 \times 15 = ₹ 225$

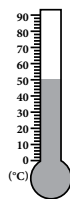


### Olympiad Bite

- Division is used for finding the value of 1 object.
- Multiplication is used for finding the value of many objects.

## SELF TEST - 2

1. Convert  $3\frac{1}{2}$  days into hours.  
 (A) 60 hours (B) 84 hours  
 (C) 70 hours (D) 80 hours
2. The temperature on the given thermometer shows \_\_\_\_\_.  
 (A)  $35^{\circ}\text{C}$   
 (B)  $40^{\circ}\text{C}$   
 (C)  $50^{\circ}\text{C}$   
 (D)  $55^{\circ}\text{C}$
3. The arrival time of a bus at a particular is 8 : 15 a.m. If the bus is late by 50 minutes, then at what time



will the bus reach at that stop?

- (A) 9 : 05 a.m. (B) 9 : 10 a.m.  
 (C) 8 : 50 a.m. (D) 8 : 55 a.m.
4. If the cost of 15 shirts is ₹ 900, then find the cost of 25 such shirts.  
 (A) ₹ 1450 (B) ₹ 1800  
 (C) ₹ 1250 (D) ₹ 1500
5. Kanika joined her dance classes on April 12<sup>th</sup> for 39 days. On which date will her dance classes last?  
 (A) 12<sup>th</sup> May (B) 13<sup>th</sup> May  
 (C) 14<sup>th</sup> May (D) 20<sup>th</sup> May

# EXERCISE

1. How many litres of water the given bucket can hold?

- (A) 2.529 L  
(B) 2.592 L  
(C) 25.29 L  
(D) 25.92 L

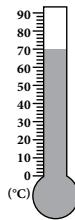


2. Sneha travelled 58 km 350 m distance by car, 16 km 280 m distance by bus and 5 km 150 m distance by bicycle. How much total distance did she travel?

- (A) 78 km 650 m (B) 80 km 120 m  
(C) 75 km 620 m (D) 79 km 780 m

3. What temperature does the given thermometer shows?

- (A) 68°C  
(B) 70°C  
(C) 75°C  
(D) 72°C



4. The weights of four boxes are 5 kg 105 g, 2 kg 150 g, 3 kg 50 g and 1 kg 120 g. What is their total weight?

- (A) 10 kg 128 g (B) 11 kg 2 g  
(C) 11 kg 425 g (D) 15 kg 18 g

5. Find the value of

$$8 \text{ L } 915 \text{ mL} + 57 \text{ L } 210 \text{ mL} - 32 \text{ L } 120 \text{ mL}$$

- (A) 34 L 5 mL (B) 32 L 8 mL  
(C) 34 L 50 mL (D) None of these

6. Express  $7\frac{5}{6}$  hrs in seconds.

- (A) 28200 seconds (B) 25400 seconds  
(C) 30400 seconds (D) 27150 seconds

7. Priya is going to make dresses to sell for a function. She bought 2500 metres of cloth. She wants to cut it into pieces that are 2.5 metres long for each dress. How many dresses can Priya make?

- (A) 900 (B) 800 (C) 1000 (D) 500

8. The total capacity of two containers is 9 L 120 mL. If capacity of container A is 2 L more than that of container B, then what is the capacity of container B?

- (A) 5560 mL (B) 3560 mL  
(C) 4120 mL (D) 3160 mL

9. Convert 15 days 16 hours 12 minutes into minutes.

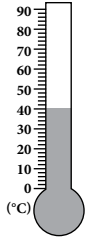
- (A) 19361 minutes (B) 18581 minutes  
(C) 23560 minutes (D) 22572 minutes

10. Karan took 3 hrs 20 mins to make a pizza. He started making pizza at 4:20 p.m. At what time did he finish making 1 pizza?

- (A) 5:30 p.m. (B) 8:20 p.m.  
(C) 6:30 p.m. (D) 7:40 p.m.

11. The room temperature is 10°C less than the temperature shown on the thermometer. What is the room temperature?

- (A) 20°C  
(B) 40°C  
(C) 30°C  
(D) 50°C



12. If the weight of a baby elephant is 88 kg 500 g, then find the weight of 5 such baby elephants.

- (A) 428 kg 280 g (B) 450 kg 150 g  
(C) 430 kg 150 g (D) 442 kg 500 g

13. How many glasses of capacity 180 mL can fill a container of capacity 9 L completely?

- (A) 50 (B) 60 (C) 70 (D) 80

14. Find the height of a pile of 35 books, if each book is 4 cm 3 mm thick.

- (A) 1505 mm (B) 1490 mm  
(C) 1705 mm (D) 1805 mm

15. Mehak decided to go to London on 14<sup>th</sup> August to meet her brother. After 12 days, she finally arrived London. On which date did she arrive London?

- (A) 26<sup>th</sup> August (B) 15<sup>th</sup> August  
(C) 20<sup>th</sup> August (D) 25<sup>th</sup> August

16. Mira had  $\frac{3}{5}$  kg of sugar. If she packed the sugar the in 12 packets equally, than how many grams of sugar were there in each packet?

- (A) 40 g (B) 50 g (C) 45 g (D) 65 g

17. Convert 80 hours 120 minutes 7200 seconds into days.

- (A) 7 days (B) 8 days (C)  $\frac{7}{2}$  days (D)  $\frac{2}{3}$  day

18. Mohit's weight is 77 kg 240 g and his brother Ashish's weight is 5 kg less than Mohit's weight. Find the total weight of Mohit and his brother.

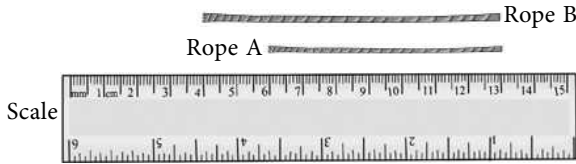
- (A) 149 kg 480 g (B) 148 kg 240 g  
(C) 152 kg 580 g (D) None of these

19. The given clock shows the time at which Shreya went for jogging from her home. If she came back at 8 : 30 a.m., then for how much time did she jog?

- (A) 80 mins (B) 60 mins  
(C) 75 mins (D) 90 mins



20. Find the difference between the lengths of two ropes.



- (A) 2 cm (B) 5 cm (C) 4 cm (D) 3 cm

21. The height of a study table is twice the height of a chair. If the height of chair is 2 m 50 cm, then what is the total length of both chair and study table?

- (A) 620 cm (B) 700 cm (C) 680 cm (D) 750 cm

22. Manisha walks 1800 m distance everyday. Find the total distance did she walk in the month of March.

- (A) 48 km 600 m (B) 50 km 500 m  
(C) 55 km 800 m (D) 55 km 550 m

23. Manish took 12 mins 30 secs to run around a 800 m track. Raghav took 13 mins 45 secs to run around the same track. How much less time did Manish take to run around the track than Raghav?

- (A) 3 mins 10 secs (B) 1 mins 15 secs  
(C) 2 mins 5 secs (D) 2 mins 3 secs

24. Rope A is 18 cm long. Rope B is three times as long as rope A and rope C is 12 cm longer than rope A. What is the total length of the three ropes?

- (A) 98.7 cm (B) 110 cm (C) 84 cm (D) 102 cm

25. The cost of a bag is ₹ 750 and cost of a jacket is ₹ 1220. If Manish bought 5 bags and 8 jackets, then find the total money paid by him.

- (A) ₹ 14860 (B) ₹ 13510  
(C) ₹ 11580 (D) ₹ 12005

26. Rashi pours 18 L 950 mL of oil equally into 50 small cans. How much oil is there in each small can?

- (A) 379 mL (B) 481 mL (C) 315 mL (D) 340 mL

27. Ruchi started knitting a sweater on August 19<sup>th</sup>. If she completed it in 22 days, then on which day did she finish it?

- (A) 8<sup>th</sup> September (B) 11<sup>th</sup> September  
(C) 9<sup>th</sup> September (D) 12<sup>th</sup> September

28. Priya spent ₹ 15820 on buying a second hand car. She also spent ₹ 5160 on repairing and ₹ 1280 on petrol. Find the total amount spent by her.

- (A) ₹ 25670 (B) ₹ 22260  
(C) ₹ 30150 (D) None of these

29. Sahil paint  $\left(\frac{1}{5}\right)^{\text{th}}$  of a wall with saffron colour,  $\left(\frac{2}{5}\right)^{\text{th}}$  of a wall with white colour and rest with green colour.

If height of a wall is 15 m, then find the height of the wall painted with green colour.

- (A) 600 cm (B) 800 cm (C) 500 cm (D) 300 cm

30. Saurav had ₹ 1500 with him. If he used  $\left(\frac{1}{5}\right)^{\text{th}}$  of his money for buying milk and  $\left(\frac{2}{5}\right)^{\text{th}}$  of the money on fruits, then how much money is left with him?

- (A) ₹ 350 (B) ₹ 450 (C) ₹ 550 (D) ₹ 600

31. Komal's birthday party starts at 5 : 20 p.m. and finished 4 hours 20 minutes later. When did the party finish?

- (A) 9 : 10 p.m. (B) 9 : 40 p.m.  
(C) 9 : 20 p.m. (D) 9 : 18 p.m.

32. At a certain place, the temperature in the morning is 25°C. It gone up by 15°C in the noon and further gone down by 10°C in the evening. Find the temperature in the evening.

- (A) 50°C (B) 40°C (C) 30°C (D) 35°C

33. Surbhi could complete a swimming race in 5 minutes 18 seconds. After some practice, she could complete the same race in 4 minutes 52 seconds. By how much time her speed improved?

- (A) 30 secs (B) 26 secs (C) 20 secs (D) 28 secs

34. Neha deposit ₹ 1,05,618 on Monday. If she withdraws ₹ 50,680 on Tuesday and then deposits ₹ 18,620 on Wednesday, then find the total amount in her account now.

- (A) ₹ 68950 (B) ₹ 73558 (C) ₹ 72180 (D) ₹ 75160

35. A large cold drink bottle holds 4.5 L of orange juice. If small glasses of capacity 150 mL is used to serve in a party, then for how many people juice can be served?

- (A) 30 (B) 32 (C) 35 (D) 38

36. The value of 18 km 5 m + 90 km 150 m - 16 km 120 m is equal to \_\_\_\_\_.

- (A) 92 km 35 m (B) 90 km 40 km  
(C) 92 km 5 m (D) None of these

37. The weight of a sack of rice is 90 kg. If Disha distribute  $\frac{3}{5}$  of the rice among 27 people equally, then how much quantity of rice each people get?

- (A) 3 kg (B) 1 kg (C) 1.5 kg (D) 2 kg

38. An elevator can bear maximum 400 kg of weight at a time. The elevator is used 80 times with maximum capacity in a day. How much maximum weight does it carry in a day?

- (A) 32000 kg (B) 28000 kg  
(C) 3200 kg (D) 35000 kg

39. The temperature of Manali, on a particular day was 12°C. After few days, the temperature will be 7°C. The temperature of Manali will be \_\_\_\_\_ by \_\_\_\_\_ than the previous temperature.

- (A) Decrease, 7°C (B) Increase, 5°C  
(C) Decrease, 5°C (D) Increase, 8°C

40. The time on the 24-hour clock below is 30 mins faster than the actual time. What is the actual time?



- (A) 02:50 hours (B) 03:55 hours  
(C) 02:55 hours (D) 02:16 hours

41. A shopkeeper sold  $\frac{4}{7}$  of 9 kg 149 g of his vegetables in the morning. How much vegetables left with him?

- (A) 3415 g (B) 2846 g  
(C) 3921 g (D) None of these

42. Manish draw a line segment of length 51 cm. He accidentally erased  $\frac{3}{5}$  of the line segment. What is the length of the remaining line segment?

- (A) 204 mm (B) 306 mm  
(C) 210 mm (D) 310 mm

43. Compare and fill the box.

18 L 950 mL + 48 L 720 mL  32 L 190 mL + 28 L 490 mL

- (A) < (B) >  
(C) = (D) Can't be determined

44. A ticket costs ₹ 18.50. How much  $7\frac{1}{2}$  tickets costs?

- (A) ₹ 117.25 (B) ₹ 140.25  
(C) ₹ 138.75 (D) ₹ 120.25

45. Rachna's car was parked in parking from 4.30 p.m. to 8.25 p.m. How much does she have to pay?

Parking Rates	
First hour	₹ 15.50
Every additional half an hour or part thereof	₹ 7

- (A) ₹ 96.25 (B) ₹ 94.95 (C) ₹ 47 (D) ₹ 57.50

## Achievers Section (HOTS)

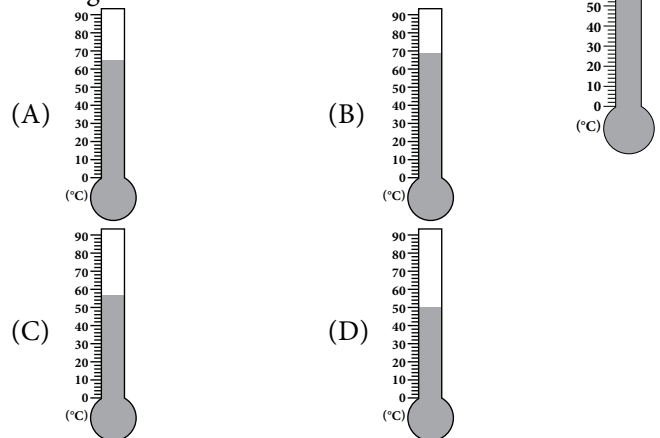
46. Read the following statements carefully and select the correct option.

**Statement-1** : If the weight of a dice is 5.20 g, then total weight of 210 such dices is 1092 g.

**Statement-2** : If the weight of a basket of fruits is 8 kg 125 g, then weight of 20 such baskets is 160 kg 250 g.

- (A) Both the Statement-1 and Statement-2 are false.  
(B) Both the Statement-1 and Statement-2 are true.  
(C) Statement-1 is true but Statement-2 is false.  
(D) Statement-1 is false but Statement-2 is true.

47. Which of the following thermometers shows 6°C more than the temperature shown in the given thermometer?



48. Akshit made a chart showing how much time he spends on homework in one week. Based on the information in the chart, which statement is true?

Time Spent on Homework	
Days	Minutes
Monday	30
Tuesday	35
Wednesday	40
Thursday	45
Friday	25

- (A) Akshit spent no time on homework on Tuesday.  
(B) Akshit spends the most time on homework on Monday.  
(C) Akshit spends the least time on homework on Thursday.  
(D) Akshit spends less time on homework on Wednesday than on Thursday.

49. Rishi and Rakhi had ₹ 350 each to spend. Rishi bought her ticket for ₹ 60.50, a drink for ₹ 15 and popcorn for ₹ 20.50. Rakhi spent ₹ 60.50 on her ticket, ₹ 30.50 on potato chips and ₹ 10 on a bottle of water. Who has more money left and by how much?

- (A) Rishi, ₹ 7 (B) Rakhi, ₹ 5  
(C) Rishi, ₹ 5 (D) Rakhi, ₹ 7

50. Which of the following is incorrect?

- (A) 18.745 kg = 18 kg 745 g  
(B) 90.080 L = 90 L 800 mL  
(C) 11 cm 8 mm = 118 mm  
(D) 18 km 804 m = 18804 m



## SOF IMO 2019 QUESTIONS

1. Priya drove from Mumbai to Goa as per the time shown in the clocks. For how long did she drive?



Left Mumbai



Arrived Goa

- (A) 8 hours 20 minutes    (B) 8 hours 25 minutes  
(C) 8 hours 30 minutes    (D) 8 hours 40 minutes

(Level-1)

2. In the morning, the room temperature was  $27^{\circ}\text{C}$ . After two hours, it had gone up by  $7^{\circ}\text{C}$  and then after three hours it had gone down by  $5^{\circ}\text{C}$ . What was the temperature after five hours?

- (A)  $22^{\circ}\text{C}$                       (B)  $39^{\circ}\text{C}$   
(C)  $29^{\circ}\text{C}$                       (D)  $40^{\circ}\text{C}$                       (Level-1)

3. Vikas took 55 minutes to complete his homework. He finished his homework at 17:45. At what time did he start doing his homework?

- (A) 17:30                      (B) 18:30  
(C) 16:40                      (D) 16:50                      (Level-1)

4. Mrs Sharma made 5.4 L of lemonade. Mrs Goyal made thrice as much lemonade as Mrs Sharma made. How much lemonade did they make together?

- (A) 20.3 L                      (B) 21.6 L  
(C) 33.5 L                      (D) 18.6 L                      (Level-1)

5. 13 bags of sugar cost ₹ 2535. If each bag contains 5 kg of sugar, then find the cost of 1 kg of sugar.

- (A) ₹ 175                      (B) ₹ 15  
(C) ₹ 39                      (D) ₹ 25                      (Level-1)

6. If 17 buckets can be filled by a pipe in  $8\frac{1}{2}$  minutes, then how many minutes will be taken by the pipe to fill 45 such buckets?

- (A)  $15\frac{1}{4}$  minutes              (B)  $22\frac{1}{2}$  minutes  
(C)  $12\frac{1}{2}$  minutes              (D)  $36\frac{1}{2}$  minutes              (Level-1)

7. Shruti earns ₹ 254.50 in a day. She spends ₹ 110.25 and saves the rest. How much money will she save in 12 days?

- (A) ₹ 1975                      (B) ₹ 957.90  
(C) ₹ 569.70                      (D) ₹ 1731                      (Level-1)


8. Kirti rented a scooty for 330 minutes. How much did she pay for it?

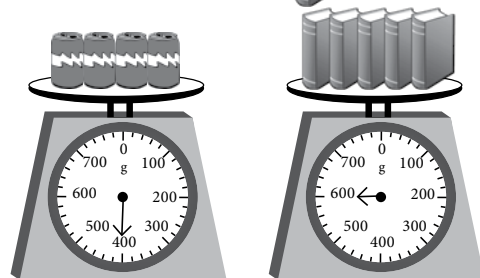
First hour : ₹ 8.75

Every additional  $\frac{1}{2}$  hour : ₹ 5.25



- (A) ₹ 56                      (B) ₹ 49  
(C) ₹ 48.75                      (D) ₹ 55.25                      (Level-1)

9. Find the weight of 3  + .

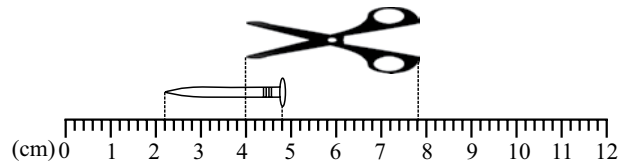


- (A) 420 g                      (B) 480 g  
(C) 500 g                      (D) 700 g                      (Level-1)

10. Three water bottles X, Y and Z contain 920 mL of water altogether. Bottle X contains twice as much water as bottle Y. Bottle Z contains 20 mL less water than bottle X. How much quantity of water is there in bottle Z?

- (A) 385 mL                      (B) 376 mL  
(C) 380 mL                      (D) 356 mL                      (Level-1)

11. What is the difference between the length of the pair of scissors and the nail?



- (A) 1.4 cm                      (B) 10.5 cm  
(C) 0.14 cm                      (D) 1.2 cm                      (Level-1)

12. Sonia talked on the telephone to two of her friends. She talked to Shivani for  $\frac{1}{4}$  hour and to Geetika for  $\frac{1}{3}$  hour. How much time did Sonia spend on the telephone?

- (A)  $\frac{1}{6}$  hour                      (B)  $\frac{2}{7}$  hour  
(C)  $\frac{5}{12}$  hour                      (D)  $\frac{7}{12}$  hour                      (Level-1)

13. Jagriti has a novel of 212 pages. If she takes 5 mins 25 secs to read a page, then how long will she take to read the complete novel?

- (A) 12 hrs 45 mins  
(B) 22 hrs 42 mins  
(C) 10 hrs 18 mins 50 secs  
(D) 19 hrs 8 mins 20 secs                      (Level-1)

14. Rekha bought 16.5 m cloth at the rate of ₹ 9 per metre and 5 dozen bangles at the rate of ₹ 12.50 per dozen. What amount does she need to pay?

- (A) ₹ 211 (B) ₹ 155.60  
(C) ₹ 340 (D) ₹ 220.90 (Level-1)

15. Mrs Sharma made 5 litres of chocolate shake in the morning. There was  $\frac{6}{11}$  litres of shake left in the evening. How much chocolate shake was used during the day?

- (A)  $5\frac{4}{11}$  litres (B)  $2\frac{4}{11}$  litres  
(C)  $4\frac{5}{11}$  litres (D)  $3\frac{2}{11}$  litres (Level-1)

16. The given table shows the prices of 3 different types of eggs.  $\frac{1}{4}$  of the eggs Priyanka bought were chicken eggs.  $\frac{1}{8}$  of them were century eggs and the rest were quail eggs. If Priyanka spent a total amount of ₹ 6.50 on the chicken and century eggs, then how much did she spend on the quail eggs?

Chicken eggs	20 paise each
Century eggs	90 paise each
Quail eggs	5 paise each

- (A) ₹ 1.25 (B) ₹ 1.40  
(C) ₹ 1.65 (D) ₹ 1.80 (Level-1)

17. A basket with 60 apples weighs 21 kg 800 g. The same basket with 8 apples weighs 3 kg 600 g. If each apple in the basket has the same weight, then

- (a) What is the weight of the empty basket?  
(b) What is the weight of the basket with 18 apples?

- |           |        |
|-----------|--------|
| (a)       | (b)    |
| (A) 800 g | 7100 g |
| (B) 400 g | 1150 g |
| (C) 300 g | 2550 g |
| (D) 800 g | 6300 g |
- (Level-1)

18. On Monday, temperature was 20°C. On Tuesday, it had gone down by 3°C and then on Wednesday, it had gone up by 8°C. What was the temperature on Wednesday?

- (A) 31°C (B) 35°C  
(C) 25°C (D) 18°C (Level-2)

19. Karan spend  $\frac{1}{3}$  of his salary and saved ₹ 1500 every month. How much did he earn in a year?

- (A) ₹ 27000 (B) ₹ 17200  
(C) ₹ 37000 (D) ₹ 31600 (Level-2)

20. A towel costs ₹ 59.90 and a bar of soap costs ₹ 12.40. Mrs Kapoor bought 2 towels and 3 bars of soap. How much did she pay altogether?

- (A) ₹ 132.30 (B) ₹ 164  
(C) ₹ 157 (D) ₹ 144.60 (Level-2)

21. Anita filled a tank with 8 L 725 mL of oil, a can with 3 L 25 mL of oil and a bottle with 725 mL of oil. How much quantity of oil did Anita have altogether?

- (A) 12 L 475 mL (B) 14 L 475 mL  
(C) 12 L 450 mL (D) 14 L 450 mL  
(Level-2)

22. An empty jar weighs 3 kg 125 g. Reshma put some marbles of weight 54 g each. Now, the total weight of the jar is 4 kg 97 g. How many marbles did Reshma put in the jar?

- (A) 24 (B) 15  
(C) 12 (D) 18 (Level-2)

23. A rope P is 9.5 m long. The length of rope Q is  $\left(\frac{2}{5}\right)^{\text{th}}$  of the length of rope P. What is the total length of both the ropes?

- (A) 13.3 m (B) 15.2 m  
(C) 11.4 m (D) 14.3 m (Level-2)

24. Rajat bought 14 kg 460 g of tomatoes. If he can put 1 kg 205 g of tomatoes in each bag, then how many bags does he need to put all the tomatoes?

- (A) 14 (B) 10  
(C) 12 (D) 8 (Level-2)

25. Which of the following options is correct?

- (A) 8 L 42 mL = 842 mL  
(B) 3 hm 4 dam = 340 m  
(C) 75 km 15 m = 7515 m  
(D) 2 dg 5 cg = 205 mg (Level-2)

26. The given table shows the timings of a showroom. Study it carefully and answer the question that follows.

Day	Time
Mon - Fri	9:30 a.m. - 5:00 p.m.
Sat - Sun	9:45 a.m. - 2:00 p.m.

Sameer arrived at the showroom at 8:15 a.m. on Wednesday. How long will he have to wait for the showroom to open? If he arrived at the same time on Sunday, then how long will he have to wait?

- (A) 1 hr 15 mins, 1 hr 40 mins  
(B) 1 hr 5 mins, 1 hr 40 mins  
(C) 1 hr 5 mins, 1 hr 30 mins  
(D) 1 hr 15 mins, 1 hr 30 mins (Level-2)



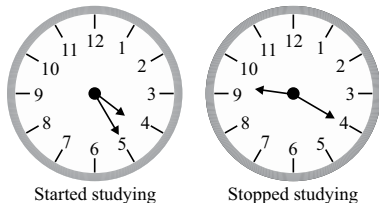
27. The given table shows the fare of travelling from two cabs X and Y. Study it carefully and answer the following question.

	Fare (1 <sup>st</sup> km)	Every additional (1/2) km or part thereof
Cab X	₹ 28.40	₹ 6.25
Cab Y	₹ 24.50	₹ 8.45

How much total money Sneha has to pay if she travels 4.5 km by Cab Y and 3.5 km from Cab X?

- (A) ₹ 143.30 (B) ₹ 115.90  
(C) ₹ 215.90 (D) ₹ 275.30 (Level-2)

28. Ramya started studying at time shown below. After 2 hours 15 minutes, she stopped and took some rest. She then again studied for another 1 hour 45 minutes and then stopped at the time shown. How long was her rest period?



- (A) 50 mins (B) 1 hr  
(C) 1 hr 05 mins (D) 55 mins (Level-2)

29. Niharika has ₹ 9600. She spends 1/3 of her money on clothes and 1/2 of the remaining money on food. How much money is left with her?

- (A) ₹ 1600 (B) ₹ 3200  
(C) ₹ 6400 (D) ₹ 3600 (Level-2)

30. The given table shows the weight of five friends.

Students	Weight (in kg)
Kavya	56.5
Kamal	68.5
Aman	?
Karan	49
Aanchal	53.5

If the total weight of all the five students is 289 kg 500 g, then find the weight of Aman.

- (A) 61 kg 500 g (B) 61 kg  
(C) 62 kg 500 g (D) 62 kg (Level-2)

31. Tanya has 7.8 m of thread. If she needs 3 m thread to make a necklace, then how many necklaces can she

make and how much thread is left with her?

- (A) 2, 1.8 m (B) 1, 1.8 m  
(C) 1, 0.8 m (D) 2, 0.8 m (Level-2)

32. 520 g of tiny pink pebbles are mixed with 580 g of tiny purple pebbles. Vihan packed the mixture of tiny pebbles into 5 equal packets. How many grams of the mixture are there in each packet?

- (A) 220 (B) 330  
(C) 230 (D) 150 (Level-2)

33. The table below shows the cost of cashews at stalls X, Y and Z.

Stall	X	Y	Z
Price of cashews	₹ 180 per kg	₹ 117 for 650 g	₹ 162 for 900 g

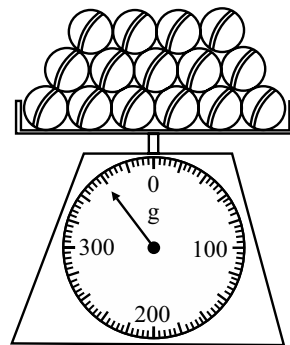
Which of the following stalls sell the cashews at the same price?

- (A) Only X and Z (B) Only X and Y  
(C) Only Y and Z (D) X, Y and Z (Level-2)

34. Atul had ₹ 2000. He bought potatoes for ₹ 115.40, rice for ₹ 310.50, sugar for ₹ 549.45 and fruits for ₹ 498.99. How much money is left with him?

- (A) ₹ 520.75 (B) ₹ 545.66  
(C) ₹ 425.75 (D) ₹ 525.66 (Level-2)

35. Read the statements carefully and select the correct option.



**Statement-1** : Value of weight of 12 such balls is 8<sup>th</sup> multiple of 36.

**Statement-2** : Weight of 8 such balls is 72 g more than weight of 5 such balls.

- (A) Both Statement-1 and Statement-2 are true.  
(B) Statement-1 is true but Statement-2 is false.  
(C) Statement-1 is false but Statement-2 is true.  
(D) Both Statement-1 and Statement-2 are false.

(Level-2)

# HINTS & EXPLANATIONS

## SELF TEST - 1

- (D): Required difference =  $(540 - 450)$  cm = 90 cm
- (B):  $5$  cm  $7$  mm =  $50$  mm +  $7$  mm =  $57$  mm
- (A):  $\therefore 5$  L  $60$  mL -  $2$  L  $30$  mL  
 $= (5060 - 2030)$  mL =  $3030$  mL  
 And,  $6$  L  $40$  mL -  $5$  L  $105$  mL  
 $= (6040 - 5105)$  mL =  $935$  mL  
 So,  $3030$  mL  $>$   $935$  mL
- (C): Weight of mangoes =  $5400$  g  
 $= (5000 + 400)$  g  
 $= 5$  kg  $400$  g
- (A): Quantity of water in a glass =  $150$  mL  
 $\therefore$  Quantity of water in  $18$  such glasses =  $(150 \times 18)$  mL  
 $= 2700$  mL

## SELF TEST - 2

- (B):  $3\frac{1}{2}$  days =  $\left(\frac{7}{2} \times 24\right)$  hours  
 $= 84$  hours
- (C)
- (A): Arrival time of bus =  $8 : 15$  a.m.  
 Since, the bus is late by  $50$  minutes  
 So, time at which bus will reach the stop  
 $= 50$  mins after  $8 : 15$  a.m.  
 $= 9 : 05$  a.m.
- (D): Cost of  $15$  shirts = ₹  $900$   
 Cost of  $1$  shirt = ₹  $(900 \div 15)$  = ₹  $60$   
 $\therefore$  Cost of  $25$  such shirts = ₹  $(60 \times 25)$  = ₹  $1500$
- (D): Date at which Kanika joined dance classes =  $12^{\text{th}}$  April  
 $\therefore$  Date at which the classes last =  $20^{\text{th}}$  May

## EXERCISE

- (A)
- (D): Total distance travelled  
 $= 58$  km  $350$  m +  $16$  km  $280$  m +  $5$  km  $150$  m  
 $= 79$  km  $780$  m
- (B)
- (C): Total weight =  $5$  kg  $105$  g +  $2$  kg  $150$  g +  $3$  kg  $50$  g +  $1$  kg  $120$  g  
 $= (5105 + 2150 + 3050 + 1120)$  g =  $11425$  g  
 or  $11$  kg  $425$  g
- (A):  $8$  L  $915$  mL +  $57$  L  $210$  mL -  $32$  L  $120$  mL  
 $= (8915 + 57210 - 32120)$  mL  
 $= (66125 - 32120)$  mL  
 $= 34005$  mL or  $34$  L  $5$  mL
- (A):  $7\frac{5}{6}$  hours =  $\left(\frac{47}{6} \times 3600\right)$  seconds  
 $= 28200$  seconds
- (C): Total length of cloth =  $25$  m =  $2500$  cm  
 Length of cloth used for  $1$  dress =  $2.5$  cm  
 $\therefore$  Number of dresses made =  $\frac{2500}{2.5} = 1000$
- (B): Total capacity of container  $A$  and  $B$  =  $9$  L  $120$  mL  
 $= 9120$  mL  
 $\Rightarrow$  Capacity of container  $A$  + Capacity of container  $B$   
 $= 9120$  mL  
 $\Rightarrow$  Capacity of container  $B$  +  $2L$  + Capacity of container  $B$   
 $= 9120$  mL  
 $\Rightarrow 2 \times$  Capacity of container  $B$  =  $(9120 - 2000)$  mL  
 $= 7120$  mL  
 $\Rightarrow$  Capacity of container  $B$  =  $7120 \div 2 = 3560$  mL
- (D): We have,  $15$  days  $16$  hours  $12$  minutes  
 $= (15 \times 24)$  hours +  $16$  hours +  $12$  minutes  
 $= 376$  hours +  $12$  minutes  
 $= (376 \times 60)$  minutes +  $12$  minutes  
 $= 22572$  minutes
- (D): Time at which Karan started making pizza =  $4:20$  p.m.  
 He took  $3$  hours  $20$  minutes to make  $1$  pizza.  
 $\therefore$  Time at which making pizza is finished =  $3$  hours  
 $20$  minutes after  $04:20$  p.m. *i.e.*, at  $7:40$  p.m.
- (C): Temperature shown on the thermometer =  $40^{\circ}\text{C}$   
 $\therefore$  Room temperature =  $40^{\circ}\text{C} - 10^{\circ}\text{C} = 30^{\circ}\text{C}$
- (D): Weight of  $1$  baby elephant =  $88$  kg  $500$  g  
 $= 88500$  g  
 $\therefore$  Weight of  $5$  such baby elephants  
 $= 88500 \times 5 = 442500$  g =  $442$  kg  $500$  g
- (A): Capacity of container =  $9$  L =  $9000$  mL  
 Capacity of  $1$  glass =  $180$  mL  
 $\therefore$  Number of glasses required =  $9000 \div 180 = 50$
- (A): Thickness of  $1$  book =  $4$  cm  $3$  mm =  $43$  mm  
 $\therefore$  Height of pile of  $35$  books  
 $= (43 \times 35)$  mm =  $1505$  mm

15. (A)

16. (B) : Weight of sugar Mira had =  $\frac{3}{5}$  kg

$$= \left( \frac{3}{5} \times 1000 \right) \text{g} = 600 \text{ g}$$

Number of packets = 12

So, weight of sugar in each packet =  $(600 \div 12) \text{ g} = 50 \text{ g}$

17. (C) : 80 hours 120 minutes 7200 seconds

$$= 80 \text{ hours} \left( \frac{120}{60} \right) \text{ hours} \left( \frac{7200}{3600} \right) \text{ hours}$$

$$= 80 \text{ hours} + 2 \text{ hours} + 2 \text{ hours} = 84 \text{ hours}$$

Now, 1 hour =  $\frac{1}{24}$  day

$$\therefore 84 \text{ hours} = \frac{84}{24} \text{ days} = \frac{7}{2} \text{ days}$$

18. (A) : Weight of Mohit = 77 kg 240 g = 77240 g

Weight of Ashish =  $(77240 - 5000) \text{ g} = 72240 \text{ g}$

So, total weight of Manish and Ashish

$$= (77240 + 72240) \text{ g} = 149480 \text{ g} = 149 \text{ kg } 480 \text{ g}$$

19. (C)

20. (A) : Length of rope A =  $(13 - 6) \text{ cm} = 7 \text{ cm}$

Length of rope B =  $(13 - 4) \text{ cm} = 9 \text{ cm}$

So, required difference =  $(9 - 7) \text{ cm} = 2 \text{ cm}$

21. (D) : Height of chair = 2 m 50 cm = 250 cm

Height of study table =  $250 \text{ cm} \times 2 = 500 \text{ cm}$

$\therefore$  Total height of study table and chair

$$= (500 + 250) \text{ cm} = 750 \text{ cm}$$

22. (C) : Distance walked in a day = 1800 m

Number of days in March = 31

So, total distance walked by Manisha in March

$$= (31 \times 1800) \text{ m} = 55800 \text{ m} = 55 \text{ km } 800 \text{ m}$$

23. (B) : Manish took 12 mins 30 secs to run around a 800 m track.

Raghav took 13 mins 45 secs to run around the same track.

$\therefore$  Manish took 1 mins 15 secs less than Raghav.

24. (D) : Length of rope A = 18 cm

Length of rope B =  $3 \times$  length of rope A

$$= 3 \times 18 = 54 \text{ cm}$$

Length of rope C = 12 cm + length of rope A

$$= 12 \text{ cm} + 18 \text{ cm} = 30 \text{ cm}$$

$\therefore$  Total length of three ropes

$$= 18 \text{ cm} + 54 \text{ cm} + 30 \text{ cm} = 102 \text{ cm}$$

25. (B) : Cost of 1 bag = ₹ 750

and cost of 1 jacket = ₹ 1220

$\therefore$  Total cost of 5 bags and 8 jackets

$$= ₹ (5 \times 750 + 8 \times 1220) = ₹ 13510$$

26. (A) : Quantity of oil Rashi poured = 18 L 950 mL

$$= 18950 \text{ mL}$$

Number of cans = 50

$$\therefore \text{Quantity of oil in each small can} = 18950 \div 50 \\ = 379 \text{ mL}$$

27. (C)

28. (B) : Total amount spent by her

$$= ₹ (15820 + 5160 + 1280) = ₹ 22260$$

29. (A) : Height of wall = 15 m = 1500 cm

Height of wall painted with saffron colour

$$= \frac{1}{5} \times 1500 = 300 \text{ cm}$$

Height of wall painted with white colour

$$= \frac{2}{5} \times 1500 = 600 \text{ cm}$$

$\therefore$  Height of wall painted with green colour

$$= (1500 - 300 - 600) \text{ cm} = 600 \text{ cm}$$

30. (D) : Total amount Saurav had = ₹ 1500

$$\text{Money spent on milk} = ₹ \left( \frac{1}{5} \times 1500 \right) = ₹ 300$$

$$\text{Money spent on fruits} = ₹ \left( \frac{2}{5} \times 1500 \right) = ₹ 600$$

$$\text{Amount left with him} = ₹ (1500 - 300 - 600) = ₹ 600$$

31. (B)

32. (C) : Temperature in morning = 25°C

Temperature in noon = 25°C + 15°C = 40°C

Temperature in evening = 40°C - 10°C = 30°C

33. (B) : Required time = 5 mins 18 secs - 4 mins 52 secs

$$= 318 \text{ secs} - 292 \text{ secs} = 26 \text{ secs}$$

34. (B) : Total amount in Neha's account

$$= ₹ [105618 - 50680 + 18620] = ₹ 73558$$

35. (A) : Total quantity of orange juice = 4.5 L

$$= 4500 \text{ mL}$$

$\therefore$  Number of people who can be served

$$= 4500 \div 150 = 30$$

36. (A) : 18 km 5 m + 90 km 150 m - 16 km 120 m

$$= (18005 + 90150 - 16120) \text{ m}$$

$$= 92035 \text{ m} = 92 \text{ km } 35 \text{ m}$$

37. (D) : Weight of sack of rice = 90 kg

$$\frac{3}{5} \text{ of total rice} = \left[ \frac{3}{5} \times 90 \right] = 54 \text{ kg}$$

So, quantity of rice each people get =  $54 \div 27 = 2 \text{ kg}$

38. (A) : Maximum weight bear by elevator = 400 kg

Number of times elevator used in a day = 80

$\therefore$  Maximum weight carried by elevator in




$$1 \text{ day} = 400 \times 80 = 32000 \text{ kg}$$

39. (C)

40. (C)

## SOF IMO 2019 QUESTIONS

41. (C) : Total quantity of vegetables = 9 kg 149 g  
 $= 9149 \text{ g}$   
 Quantity of vegetables sold =  $\frac{4}{7} \times 9149 \text{ g} = 5228 \text{ g}$   
 $\therefore$  Remaining quantity of vegetables =  $(9149 - 5228) \text{ g}$   
 $= 3921 \text{ g}$
42. (A) : Length of line segment drawn by Manish  
 $= 51 \text{ cm} = 510 \text{ mm}$   
 Length of line segment erased =  $\frac{3}{5} \times 510 = 306 \text{ mm}$   
 $\therefore$  Length of remaining line segment =  $(510 - 306) \text{ mm}$   
 $= 204 \text{ mm}$
43. (B) : 18 L 950 mL + 48 L 720 mL  
 $= (18950 + 48720) \text{ mL} = 67670 \text{ mL}$   
 And, 32 L 190 mL + 28 L 490 mL  
 $= (32190 + 28490) \text{ mL} = 60680 \text{ mL}$   
 Now,  $67670 \text{ mL} > 60680 \text{ mL}$
44. (C) : Cost of 1 ticket = ₹ 18.50  
 $\therefore$  Cost of  $7\frac{1}{2}$  tickets =  $\frac{15}{2} \times ₹ 18.50 = ₹ 138.75$
45. (D) : Duration from 4 : 30 p.m. to 8 : 25 p.m.  
 So, parking rate for first hour (i.e., 4 : 30 p.m. to 5 : 30 p.m.)  
 $= ₹ 15.50$   
 Now, parking rate for remaining 6 half hours  
 (i.e., 5 : 30 p.m. to 8 : 25 p.m.)  
 $= 6 \times ₹ 7 = ₹ 42$   
 So, total amount she had to pay  
 $= ₹ 15.50 + ₹ 42 = ₹ 57.50$
46. (C) : Statement-1 : Weight of 1 dice = 5.20 g  
 Weight of 210 dice =  $(5.20 \times 210) \text{ g} = 1092 \text{ g}$   
 Statement-2 : Weight of 1 basket of fruits  
 $= 8 \text{ kg } 125 \text{ g} = 8.125 \text{ kg}$   
 Weight of 20 baskets of fruits =  $(20 \times 8.125) \text{ kg}$   
 $= 162.50 \text{ kg} = 162 \text{ kg } 500 \text{ g}$
47. (B)
48. (D)
49. (C) : Amount spent by Rishi  
 $= ₹ 60.50 + ₹ 15 + ₹ 20.50 = ₹ 96$   
 Amount spent by Rakhi =  $₹ 60.50 + ₹ 30.50 + ₹ 10 = ₹ 101$   
 So, amount left with Rishi =  $₹ (350 - 96) = ₹ 254$   
 And amount left with Rakhi =  $₹ (350 - 101) = ₹ 249$   
 $\therefore$  Rishi has left ₹  $(254 - 249) = ₹ 5$  more than Rakhi.
50. (B)

1. (C) : Time at which Priya left Mumbai = 6 : 15 hours  
 Time at which Priya reached Goa = 14 : 45 hours  
 So, duration of journey = 8 hours and 30 minutes
2. (C) : Temperature after 5 hours  
 $= (27 + 7 - 5)^\circ\text{C} = 29^\circ\text{C}$
3. (D) : Time at which he start doing homework is  
 55 mins before 17 : 45 i.e; 16 : 50.
4. (B) : Quantity of lemonade Mrs Sharma made = 5.4 L  
 Quantity of lemonade Mrs Goyal made  
 $= 3 \times 5.4 \text{ L} = 16.2 \text{ L}$   
 So, total quantity of lemonade they both made  
 $= 5.4 + 16.2 = 21.6 \text{ L}$
5. (C) : Quantity of sugar in 1 bag = 5 kg  
 So, quantity of sugar in 13 bags =  $5 \times 13 = 65 \text{ kg}$   
 $\Rightarrow$  Cost of 65 kg sugar = ₹ 2535  
 So, cost of 1 kg sugar =  $₹ (2535 \div 65) = ₹ 39$
6. (B) : Time taken to fill 17 buckets =  $8\frac{1}{2}$  mins  
 $= \frac{17}{2}$  mins  
 So, time taken to fill 1 bucket =  $\left(\frac{17}{2} \div 17\right)$  mins  
 $= \frac{17}{2} \times \frac{1}{17} = \frac{1}{2}$  mins  
 $\therefore$  Time taken to fill 45 buckets =  $\left(\frac{1}{2} \times 45\right)$  mins  
 $= 22\frac{1}{2}$  mins
7. (D) : Amount of money Shruti earns in 1 day  
 $= ₹ 254.50$   
 Amount of money she spends in 1 day = ₹ 110.25  
 So, amount of money she saves in 1 day  
 $= ₹ (254.50 - 110.25) = ₹ 144.25$   
 $\therefore$  Amount of money she saves in 12 days  
 $= ₹ (144.25 \times 12) = ₹ 1731$
8. (A) : Rent for first 60 mins = ₹ 8.75  
 Remaining time =  $330 - 60 = 270$  mins i.e; 9 half hours  
 So, total amount =  $₹ (8.75 + 9 \times 5.25)$   
 $= ₹ (8.75 + 47.25) = ₹ 56$
9. (A) : Weight of 4  = 400 g  
 $\Rightarrow$  Weight of 1  = 100 g  
 Also, weight of 5  = 600 g

$$\Rightarrow \text{Weight of 1 } \text{[Image of a box]} = 120 \text{ g}$$

$$\therefore \text{Weight of 3 } \text{[Image of a box]} + \text{[Image of a box]} = (3 \times 100 + 120) \text{ g} = 420 \text{ g}$$

10. (D): According to question, we have

$$X = 2Y \text{ and } Z = X - 20$$

Also,  $X + Y + Z = 920 \text{ mL}$

$$\Rightarrow X + \frac{X}{2} + X - 20 = 920$$

$$\Rightarrow \frac{5}{2}X = 940 \Rightarrow X = \frac{940 \times 2}{5} = 376 \text{ mL}$$

$\therefore$  Quantity of water bottle  $Z = (376 - 20) \text{ mL} = 356 \text{ mL}$

11. (D): Length of pair of scissors =  $(7.8 - 4) \text{ cm} = 3.8 \text{ cm}$

Length of nail =  $(4.8 - 2.2) \text{ cm} = 2.6 \text{ cm}$

$\therefore$  Required difference =  $(3.8 - 2.6) \text{ cm} = 1.2 \text{ cm}$

$$\begin{aligned} 12. (D): \text{Total time spent by Sonia} &= \left(\frac{1}{4} + \frac{1}{3}\right) \text{ hour} \\ &= \left(\frac{3+4}{12}\right) \text{ hour} = \frac{7}{12} \text{ hour} \end{aligned}$$

13. (D): Time taken to read 1 page = 5 mins 25 secs

$$= (5 \times 60 + 25) \text{ secs} = 325 \text{ secs}$$

So, time taken to read 212 pages =  $(325 \times 212) \text{ secs}$

$$= 19 \text{ hrs } 8 \text{ mins } 20 \text{ secs}$$

14. (A): Total amount to be paid

$$= ₹ (16.5 \times 9 + 12.50 \times 5) = ₹ (148.5 + 62.50) = ₹ 211$$

$$\begin{aligned} 15. (C): \text{Quantity of shake used} &= \left(5 - \frac{6}{11}\right) \text{ L} = \frac{49}{11} \text{ L} \\ &= 4 \frac{5}{11} \text{ L} \end{aligned}$$

16. (A): Let total number of eggs Priyanka bought be  $x$ .

$$\text{According to question, we have } \frac{1}{4}x \times \frac{20}{100} + \frac{1}{8}x \times \frac{90}{100}$$

$$= ₹ 6.50$$

$$\Rightarrow \frac{1}{20}x + \frac{9}{80}x = 6.50 \Rightarrow \frac{13}{80}x = 6.50 \Rightarrow x = 40$$

$$\begin{aligned} \text{So, number of quail eggs bought} &= x - \left(\frac{1}{4} + \frac{1}{8}\right)x = \frac{5}{8}x \\ &= \frac{5}{8} \times 40 = 25 \end{aligned}$$

$$\begin{aligned} \therefore \text{Amount spent on quail eggs} &= ₹ \left(25 \times \frac{5}{100}\right) \\ &= ₹ 1.25 \end{aligned}$$

17. (A): Weight of (basket + 60 apples) = 21 kg 800 g  
= 21800 g ... (i)

Weight of (basket + 8 apples) = 3 kg 600 g = 3600 g

$$\Rightarrow \text{Weight of (basket + 8 apples + 52 apples)} = 21800 \text{ g} \quad [\text{From (i)}]$$

$$\Rightarrow 3600 \text{ g} + \text{Weight of 52 apples} = 21800 \text{ g}$$

$$\Rightarrow \text{Weight of 52 apples} = (21800 - 3600) \text{ g} = 18200 \text{ g}$$

$$\Rightarrow \text{Weight of 1 apple} = (18200 \div 52) \text{ g} = 350 \text{ g}$$

(i) So, weight of empty basket

$$= 21800 - \text{Weight of 60 apples}$$

$$= 21800 - (60 \times 350) = 21800 - 21000 = 800 \text{ g}$$

(ii) Weight of (basket + 18 apples) =  $800 + (18 \times 350)$

$$= (800 + 6300) \text{ g} = 7100 \text{ g}$$

18. (C): Temperature on Wednesday

$$= (20 - 3 + 8)^\circ\text{C} = 25^\circ\text{C}$$

19. (A): Let monthly salary be ₹  $x$ .

According to question, we have

$$\frac{1}{3}x + 1500 = x \Rightarrow \frac{2}{3}x = 1500 \Rightarrow x = ₹ 2250$$

$$\therefore \text{Total amount of earned in 1 year} = ₹ (2250 \times 12) = ₹ 27000$$

20. (C): Total amount to be paid

$$= ₹ (59.90 \times 2 + 12.40 \times 3) = ₹ 157$$

21. (A): Total quantity of oil Anita have

$$= 8 \text{ L } 725 \text{ mL} + 3 \text{ L } 25 \text{ mL} + 725 \text{ mL} = 12 \text{ L } 475 \text{ mL}$$

22. (D): Let the number of marbles be  $x$ .

According to question, we have

$$3 \text{ kg } 125 \text{ g} + (54 \times x) \text{ g} = 4 \text{ kg } 97 \text{ g}$$

$$\Rightarrow 3125 + 54x = 4097$$

$$\Rightarrow 54x = 972 \text{ g} \Rightarrow x = (972 \div 54) \Rightarrow x = 18$$

So, number of marbles in the jar = 18

23. (A): Length of rope  $P = 9.5 \text{ m}$

$$\text{Length of rope } Q = \left(\frac{2}{5} \times 9.5\right) \text{ m} = 3.8 \text{ m}$$

$$\therefore \text{Total length of both ropes} = (9.5 + 3.8) \text{ m} = 13.3 \text{ m}$$

24. (C): Total quantity of tomatoes = 14 kg 460 g

$$= 14460 \text{ g}$$

Quantity of tomatoes in 1 bag = 1 kg 205 g = 1205 g

$$\therefore \text{Number of bags} = (14460 \div 1205) = 12$$

25. (B): (A) 8 L 42 mL =  $(8000 + 42) \text{ mL} = 8042 \text{ mL}$

(B) 3 hm 4 dam =  $(300 + 40) \text{ m} = 340 \text{ m}$

(C) 75 km 15 m =  $(75000 + 15) \text{ m} = 75015 \text{ m}$

(D) 2 dg 5 cg =  $(200 + 50) \text{ mg} = 250 \text{ mg}$

26. (D)

$$\begin{aligned} 27. (A): \text{Amount paid for cab X} &= ₹ (28.40 + 5 \times 6.25) \\ &= ₹ 59.65 \end{aligned}$$

$$\text{Amount paid for cab Y} = ₹ (24.50 + 7 \times 8.45) = ₹ 83.65$$

$$\therefore \text{Total amount paid} = ₹ (59.65 + 83.65) = ₹ 143.30$$

28. (D)

29. (B) : Amount of money Niharika has = ₹ 9600

$$\begin{aligned}\text{Amount of money spent on clothes} &= ₹ \left( \frac{1}{3} \times 9600 \right) \\ &= ₹ 3200\end{aligned}$$

$$\text{Amount of money left} = ₹ (9600 - 3200) = ₹ 6400$$

$$\begin{aligned}\text{Amount of money spent on food} &= ₹ \left( \frac{1}{2} \times 6400 \right) \\ &= ₹ 3200\end{aligned}$$

$$\begin{aligned}\therefore \text{Amount of money left with her} &= ₹ (6400 - 3200) \\ &= ₹ 3200\end{aligned}$$

30. (D) : Weight of Aman

$$= 289.500 - (56.5 + 68.5 + 49 + 53.5)$$

$$= 289.5 - 227.5 = 62 \text{ kg}$$

31. (A) : Total length of thread = 7.8 m

$$= 3 \text{ m} + 3 \text{ m} + 1.8 \text{ m}$$

So, 2 necklaces she can make and 1.8 m thread is left.

32. (A) : Total weight of mixture =  $(580 + 520) \text{ g} = 1100 \text{ g}$

$$\therefore \text{Weight in each packet} = (1100 \div 5) \text{ g} = 220 \text{ g}$$

$$\begin{aligned}\text{33. (D) : Cost of 1 g cashews from stall X} &= ₹ \left( \frac{180}{1000} \right) \\ &= ₹ 0.18\end{aligned}$$

$$\text{Cost of 1 g cashews from stall Y} = ₹ \left( \frac{117}{650} \right) = ₹ 0.18$$

$$\text{Cost of 1 g cashews from stall Z} = ₹ \left( \frac{162}{900} \right) = ₹ 0.18$$

$\therefore$  All stalls have same cost.

34. (D) : Amount of money left

$$= ₹ [2000 - (115.40 + 310.50 + 549.45 + 498.99)]$$

$$= ₹ (2000 - 1474.34) = ₹ 525.66$$

35. (A) : Weight of 15 balls = 360 g

$$\Rightarrow \text{Weight of 1 balls} = (360 \div 15) \text{ g} = 24 \text{ g}$$

$$\therefore \text{Weight of 12 balls} = (24 \times 12) \text{ g} = 288 \text{ g} = (8 \times 36) \text{ g}$$

$$\text{Weight of 8 balls} = (8 \times 24) \text{ g} = 192 \text{ g}$$

$$\text{Weight of 5 balls} = (5 \times 24) \text{ g} = 120 \text{ g}$$

$$\therefore \text{Difference} = (192 - 120) \text{ g} = 72 \text{ g}$$