

5.1 Distance

Distance is a numerical description of how far apart objects are.

5.1.1 Conversion of Units of Lengths

We can convert the unit of distance from one unit to another using the given chart.

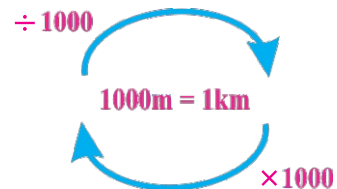
$$\begin{aligned} 1000\text{m} &= 1\text{km} \\ 100\text{cm} &= 1\text{m} \\ 10\text{mm} &= 1\text{cm} \end{aligned}$$

- Kilometres to metres**

We can convert Kilometres to metres by multiplying the kilometres with 1000. For example, $3\text{ km} = 3 \times 1000 = 3000\text{ m}$

For changing metres to kilometres we divide the metres by 1000. For example,

$$21000\text{ m} = \frac{21000}{1000} = 21\text{ km}$$

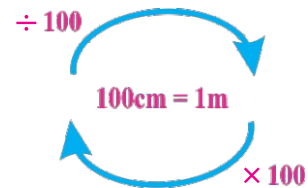


- Metres to centimetres**

We can convert metres to centimetres by multiplying the metres with 100. For example, $2.5\text{ m} = 2.5 \times 100 = 250\text{ cm}$.

For changing centimetres to metres we divide the centimetres by 100. For example,

$$3500\text{ cm} = \frac{3500}{100} = 35\text{ m}$$

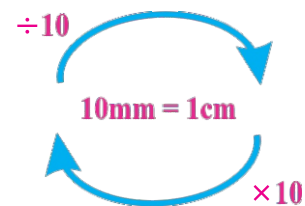


- Centimetres to millimetres,**

We can convert centimetres to millimetres by multiplying the centimetres with 10. For example, $6\text{ cm} = 6 \times 10 = 60\text{ mm}$.

For changing millimetres to centimetres we divide the millimetres by 10. For example,

$$500\text{ mm} = \frac{500}{10} = 50\text{ cm}$$



Example 1 Convert 25 km to metres.

Solution 25 kilometres
 \because 1 kilometre = 1000 metres.
 25 kilometres = 25×1000 m
 = 25,000 metres

Example 2 Convert 15 metres to centimetres.

Solution 15 metres
 \because 1 metre = 100 centimetre
 15 metres = 15×100 cm
 = 1500 cm

Example 3 Convert 5 centimetres to millimetres.

Solution 5 centimetres
 \because 1 centimetre = 10 mm
 5 centimetres = 5×10 mm
 = 50 mm

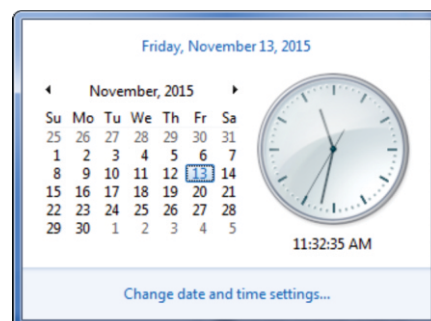
Exercise 5.1

Convert the following:

- | | |
|--------------------------|-----------------------------|
| i. 320 mm to centimetres | ii. 6420 m to kilometres |
| iii. 642 cm to metres | iv. 88 cm to metres |
| v. 224 cm to millimetres | vi. 4.5 cm to millimetres |
| vii. 32 km to metres | viii. 8.73 m to centimetres |
| ix. 150 cm to metres | x. 360 mm to centimetres |

5.2 Time

Time is measured using seconds, minutes, hours, days, weeks, months and years. Clocks measure time in seconds, minutes, hours. Calendars are used to keep the records of days, weeks, months and years.



5.2.1 Conversion of hours to minutes, minutes to seconds and vice versa

In our daily life we need to perform conversions between seconds, minutes and hours. Now we will learn how to perform these conversions. For converting, units of time chart given is helpful.

Time Units Conversion Chart

One Minute	=	60 Seconds
One Hour	=	60 Minutes
One Day	=	24 Hours
One Week	=	7 Days
One Month	=	~ 4 weeks
One Year	=	12 Months

~ : approximately

• Conversion of hours to minutes

As 1 hour = 60 minutes so to convert hours to minutes we multiply number of hours by 60. Following examples show how to convert hours to minutes.

Example Convert the following hours to minutes:

- i. 3 hours ii. 11 hours 55 minutes iii. $2\frac{1}{4}$ hours

Solution i. 3 hours = $3 \times 60 = 180$ minutes.

ii. 11 hours 55 minutes = $11 \times 60 + 55 = 660 + 55 = 715$ minutes.

iii. $2\frac{1}{4}$ hours = $\frac{9}{4} \times 60 = 9 \times 15 = 135$ minutes.

• Conversion of minutes to hours

As 60 minutes = 1 hour or 1 minute = $\frac{1}{60}$ so to convert minutes to hours we divide number of minutes by 60. Following examples show how to convert minutes to hours.

Example Convert the following minutes to hours:

- i. 900 minutes ii. 350 minutes iii. 90 minutes

Solution i. 900 minutes = $\frac{900}{60} = 15$ hours

ii. 350 minutes = $\frac{350}{60} = 5\frac{50}{60} = 5$ hours and 50 minutes

iii. 90 minutes = $\frac{90}{60} = 1\frac{30}{60} = 1$ hour and 30 minutes

- **Conversion of minutes to seconds**

As 1 minute = 60 seconds so to convert minutes to seconds we multiply number of minutes by 60. Following examples show how to convert minutes to seconds.

Example Convert the following minutes to seconds.

- i. 10 minutes ii. 48 minutes

Solution

i. 10 minutes = $10 \times 60 = 600$ seconds

ii. 48 minutes = $48 \times 60 = 2880$ seconds

- **Conversion of seconds to minutes**

As 60 seconds = 1 minute or 1 second = $\frac{1}{60}$ so to convert seconds to minutes we divide number of seconds by 60. Following examples show how to convert seconds to minutes.

Example Convert the following seconds to minutes

- i. 600 seconds ii. 540 seconds
iii. 350 seconds iv. 90 seconds

Solution

i. 600 seconds = $\frac{600}{60} = 10$ minutes

ii. 540 seconds = $\frac{540}{60} = 9$ minutes

iii. 350 seconds = $\frac{350}{60} = 5\frac{50}{60}$
= 5 minutes and 50 seconds

iv. 90 seconds = $\frac{90}{60} = 1\frac{30}{60}$
= 1 minute and 30 seconds

	Working
	5 minutes
60	$\begin{array}{r} \overline{) 350} \\ -300 \\ \hline 50 \text{ seconds} \end{array}$

5.2.2 Addition and subtraction of units of time with carrying / borrowing

• Addition of Units of Time with carrying

The process is illustrated in the following examples.

Example Add.

- 55 minutes, 45 minutes
- 2 hours 30 minutes, 3 hours 58 minutes
- 8 hours 45 minutes 40 seconds, 7 hours 21 minutes 35 seconds
- 9 hours 30 minutes 47 seconds, 3 hours 47 minutes 58 seconds
- 18 hours 45 minutes 50 seconds, 15 hours 55 seconds, 10 hours 40 minutes

Solution

- i. 55 minutes, 45 minutes

	Hours	Minutes
①	0	55
+	0	45
	1	40

		Working
		1 hour
60)	100
		- 60
		40 minutes

- ii. 2 hours 30 minutes, 3 hours 58 minutes

	Hours	Minutes
①	2	30
+	3	58
	6	28

		Working
		1 hour
60)	88
		- 60
		28 minutes

- iii. 8 hours 45 minutes 40 seconds, 7 hours 21 minutes 35 seconds

	Hours	Minutes	Seconds
①	8	45	40
+	7	21	35
	16	7	15

				Working	
				1 hour	1 minute
60)	67)	75	
		- 60		- 60	
		7 minutes		15 seconds	

- iv. 9 hours 30 minutes 47 seconds, 3 hours 47 minutes 58 seconds

	Hours	Minutes	Seconds
	①	①	
	9	30	47
+	3	47	58
	13	18	45

- v. 18 hours 45 minutes 50 seconds, 15 hours 55 seconds, 10 hours 40 minutes

	Days	Hours	Minutes	Seconds
	①	①	①	
		18	45	50
		15	0	55
+		10	40	0
	1	20	26	45

• Subtraction of Units of Time with Borrowing

The process of subtraction is illustrated in the following example.

Example Subtract

- i. 4 hour 10 minutes from 6 hour 25 minutes
- ii. 1 hour 35 minutes from 2 hour 18 seconds
- iii. 2 hour 52 minutes 24 seconds from 4 hour 10 minutes 20 seconds
- iv. 1 hour 5 minutes 35 seconds from 8 hour 5 minutes

Solution

- i. 4 hour 10 minutes from
6 hour 25 minutes

	Hours	Minutes
	6	25
-	4	10
	2	15

- ii. 1 hour 35 minutes from
2 hour 18 seconds

	Hours	Minutes
	①	⑥①
	2	18
-	1	35
	0	43

$$60 + 18 = 78$$

$$78 - 35 = 43$$

- iii. 2 hour 52 minutes 24 seconds from 4 hour 10 minutes 20 seconds

	Hours	Minutes	Seconds
		⑥⑩	
	3	9	⑥⑩
	4	10	20
-	2	52	24
	1	17	56

$$60 + 20 = 80$$

$$80 - 24 = 56$$

$$60 + 9 = 69$$

$$69 - 52 = 17$$

- iv. 1 hour 5 minutes 35 seconds from 8 hour 5 minutes

	Hours	Minutes	Seconds
		⑥⑩	
	7	4	⑥⑩
	8	5	0
-	1	5	35
	6	59	25

$$60 + 0 = 60$$

$$60 - 35 = 25$$

$$60 + 4 = 64$$

$$64 - 5 = 59$$

Exercise 5.2

1. Convert the following:

- i. 6 hours 40 minutes into minutes.
- ii. 4 minutes 25 seconds into seconds.

2. Convert the following:

- i. 750 minutes into hours and minutes.
- ii. 900 seconds into minutes and seconds.

3. Solve:

- i. 3 hours 20 minutes + 1 hour 10 minutes
- ii. 6 hours 45 minutes + 4 hours 15 minutes
- iii. 1 hours 37 minutes + 5 hours 47 minutes
- iv. 9 hours 17 minutes - 3 hours 55 minutes
- v. 6 hours 27 minutes - 2 hours 46 minutes
- vi. 8 hours 38 minutes - 3 hours 44 minutes
- vii. 5 hours 15 minutes - 1 hour 52 minutes

5.2.3 Conversion of years to months, months to days, weeks to days and vice versa.

Now we learn to perform conversion between days, weeks, months and years.

- **Conversion of years to months**

Following example shows how to convert years to months:

Example Convert:

- i. 15 years to months
- ii. 10 years 11 months to months

Solution 1 year = 12 months

- i. 15 years = $15 \times 12 = 180$ months
- ii. 10 years 11 months = $10 \times 12 + 11 = 120 + 11 = 131$ months

- **Conversion of months to years**

Following example shows how to convert months to years.

Example Convert:

- i. 132 months to years
- ii. 85 months to months and years

Solution 1 month = $\frac{1}{12}$ year

- i. 132 months = $\frac{132}{12} = 11$ years

- ii. 85 months = $\frac{85}{12} = 7\frac{1}{12} = 7$ years 1 month

- **Conversion of months to days**

Following example shows how to convert months to days.

Example Convert:

- i. 4 months to days
- ii. 20 months 15 days to days

Solution 1 month = 30 days

- i. 4 months = $4 \times 30 = 120$ days

- ii. 20 months 15 days = $20 \times 30 + 15 = 600 + 15 = 615$ days

- **Conversion of days to months**

Following example shows how to convert days to months.

Example Convert:

- i. 480 days to months ii. 760 days to months and days

Solution 1 day = $\frac{1}{30}$ months

i. 480 days = $\frac{480}{30} = 16$ months

ii. 760 days = $\frac{760}{30} = 25\frac{10}{30} = 25$ months 10 days

- **Conversion of weeks to days**

Following example shows how to convert weeks to days.

Example Convert:

- i. 18 weeks to days ii. 20 weeks 15 days to days

Solution 1 week = 7 days

i. 18 weeks = $18 \times 7 = 126$ days

ii. 20 weeks 15 days = $20 \times 7 + 15 = 140 + 15 = 155$ days.

- **Conversion of days to weeks**

Following example shows how to convert days to weeks.

Example Convert:

- i. 168 days to weeks ii. 750 days to weeks and days

Solution 1 day = $\frac{1}{7}$ week

i. 168 days = $\frac{168}{7} = 24$ weeks

ii. 750 days = $\frac{750}{7} = 107\frac{1}{7}$
= 107 weeks 1 day

Exercise 5.3

Convert:

- | | |
|-------------------------------------|---------------------------------------|
| 1. 83 days to weeks and days | 2. 100 days to weeks and days |
| 3. 138 days to weeks and days | 4. 1050 days to weeks and days |
| 5. 150 days to months and days | 6. 850 days to months and days |
| 7. 1000 days to months and days | 8. 35 months to years and months |
| 9. 150 months to years and months | 10. 40 months to days |
| 11. 115 months to days | 12. 12 years to months |
| 13. $5\frac{5}{12}$ years to months | 14. $10\frac{11}{12}$ years to months |

5.2.4 Solution of real life problems involving conversion, addition and subtraction of units of time.

Following examples illustrate the use of units of time in real life.

Example 1 Salma is 10 years and 7 months old and her brother is 2 years and 6 months older than her. Find the age of her brother.

Solution Adding 2 years and 6 months to the age of Salma as her brother is older than her:

	Years	Months	
Salma's age =	10	7	
Her brother is older by =	+ 2	6	
Age of her brother =	13	1	

① $7 + 6 = 13$
13 months = 1 year 1 month

Example 2 A train departed from Lahore railway station at 7: 30 am. It travelled for 5 hours and 45 minutes to reach Multan railway station. Find at what time it reached there?

Solution

	Hours	Minutes	
Departure time =	7	30	
Travelling time =	+ 5	45	
Arrival at Multan =	13	15	= 1: 15 pm

$30 + 45 = 75$
75 minutes = 1 hour 15 minutes

Example 3 A man took 44 minutes 5 second to reach his office. If he has to stop at four road signals for 1 minute 5 seconds, 45 seconds, 50 seconds and 1 minute 30 seconds. Find how much was his actual travelling time?

Solution

	Minutes	Seconds
	②	
Wait at signal 1 =	1	05
Wait at signal 2 =	0	45
Wait at signal 3 =	0	50
Wait at signal 4 =	+ 1	30
Total time at signals =	<hr style="border-top: 1px solid black;"/> 4	<hr style="border-top: 1px solid black;"/> 10
	Minutes	Seconds
	43	⑥0
Total Time =	44	05
Time at signals =	- 04	10
Actual travelling time =	<hr style="border-top: 1px solid black;"/> 39	<hr style="border-top: 1px solid black;"/> 55

Exercise 5.4

1. Ali is 12 years 9 months old and his sister Alia is 3 years 11 months old. What is the difference in their ages? How much younger Alia is from Ali?
2. Akbar started searching for his missing ball at 2:40 p.m. If he found 3:50 p.m., for how long did he search for the ball?
3. Mr. Murad teaches his class for 45 minutes. If it starts at 3:30 p.m., at what time does it end?
4. Shamim studies from 3:15 p.m. to 4:45 p.m. His sister, Samina studies from 4:30 p.m. to 6:15 p.m. Who studies longer and by how much?
5. Pervaiz has to take his medicine (one pill) after every hour. How many pills will he need for 3 days?
6. Maryam was on vacation for 3 weeks. How many days was she on vacation?

7. Murad ran in a track race on Tuesday. He finished the race in 420 seconds. How many minutes did it take to run the race?
8. Haroon is a runner. He ran 10 Km marathon in 5 hours. How many minutes did he run?
9. Aslam took 100 minutes to complete his homework. How many hours did he take to complete his homework?
10. Tariq studies 5 subjects at home. He spends 50 minutes on Mathematics, 50 minutes on Science, 30 minutes on English, 40 minutes on Urdu, 20 minutes on Computer Studies. Find:
 - (a) How much time had he spent on doing Mathematics and Science?
 - (b) How much time had he spent on doing Urdu and English?
 - (c) How much time had he to study the five subjects altogether?
11. A train takes 4 hours 45 minutes to reach Lahore from Rawalpindi. While a car through motorway, takes 3 hours 50 minutes. Find how much more time does the train take to reach Lahore?

5.3 Temperature

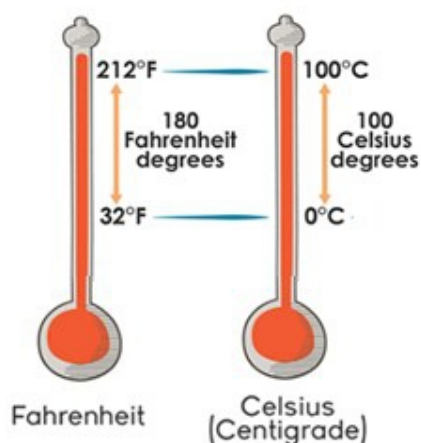
Temperature is one of the basic physical quantities of science. It's a numerical representation of how cold or hot an object is. Temperature is defined as the degree of heat present in an object, measured by a thermometer.

5.3.1 Recognition of units of temperature in Fahrenheit and Celsius

The following two basic temperature scales are commonly used:

- Celsius or Centigrade (C)
- Fahrenheit (F)

- **Celsius Scale:** The basic unit of temperature for everyday applications and use is Celsius scale, in which 0°C corresponds to the freezing point of water and 100°C is its boiling point. It is widely known as centigrade scale because the distance between melting point and boiling point of water is divided into 100 equal intervals called degrees centigrade($^{\circ}\text{C}$).
- **Fahrenheit Scale:** The second basic unit for measuring temperature is Fahrenheit. In Fahrenheit scale 32°F is freezing point and 212°F is the boiling point of water. In Fahrenheit temperature scale, the distance between melting point and boiling point of water is divided in 180 equal intervals called degrees Fahrenheit ($^{\circ}\text{F}$).



Celsius, known as centigrade is a scale of measurement for temperature. It is named after the Swedish astronomer Anders Celsius (1701–1744), who developed a similar temperature scale.

Fahrenheit (symbol $^{\circ}\text{F}$) is a temperature scale proposed in 1724 by the German physicist Daniel Gabriel Fahrenheit (1686–1736), after whom the scale is named.

5.3.2 Solution of real life problems involving conversion, addition and subtraction of units of temperature

In daily life to convert Celsius scale temperature to Fahrenheit scale temperature or vice versa, following steps are taken:

- To convert Celsius to Fahrenheit we multiply the given temperature by $\frac{9}{5}$ and add 32 to the product [or $F = \frac{9}{5} \times C + 32$]

where F is Fahrenheit temperature and C is Celsius temperature.

- To convert Fahrenheit to Celsius we subtract 32 from Fahrenheit temperature and multiply the difference by $\frac{5}{9}$ [or $C = (F - 32) \times \frac{5}{9}$] where C is Celsius temperature and F is Fahrenheit temperature.

Example

Convert:

- i. 32°F to Celsius scale ii. 212°F to Celsius scale
iii. 35° C to Fahrenheit scale iv. 102° C to Fahrenheit scale

Solution

- i. 32°F to Celsius scale

Subtract 32 from Fahrenheit temperature = $32 - 32 = 0$

Multiply the difference with $\frac{5}{9} = \frac{5}{9} \times 0 = 0^\circ\text{C}$

Thus, $32^\circ\text{F} = 0^\circ\text{C}$

- ii. 212°F to Celsius scale

Subtract 32 from Fahrenheit temperature = $212 - 32 = 180$

Multiply the difference with $\frac{5}{9} = \frac{5}{9} \times 180 = 100^\circ\text{C}$

Thus, $212^\circ\text{F} = 100^\circ\text{C}$

- iii. 35° C to Fahrenheit scale

Multiply the Celsius scale temperature by $\frac{9}{5} = 35 \times \frac{9}{5} = 63$

Add 32 to the product = $63 + 32 = 95^\circ\text{F}$

Thus, $35^\circ\text{C} = 95^\circ\text{F}$

- iv. 102° C to Fahrenheit scale

Multiply the Celsius scale temperature by $\frac{9}{5} = 102 \times \frac{9}{5} = 183.6$

Add 32 to the product = $183.6 + 32 = 215.6^\circ\text{F}$

Thus, $102^\circ\text{C} = 215.6^\circ\text{F}$

Example

The melting point of a metal is 263°C . If another metal is amalgam (mixed) in it then its melting point is increased by 25°C . Find the new melting point of the mixture.

Solution

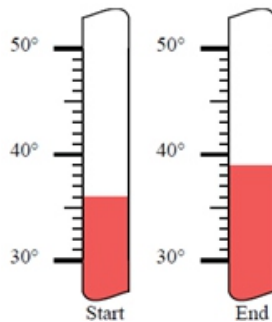
Melting point of pure metal = 263°C

Increase in melting point = 25°C

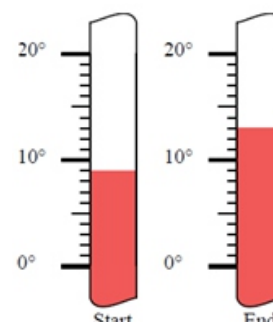
Thus, melting point of mixture is = $263^{\circ} + 25^{\circ} = 288^{\circ}\text{C}$

Exercise 5.5**1. Determine the sum and difference of these temperatures.**

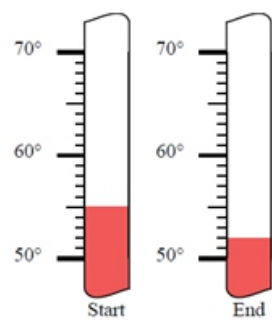
i.



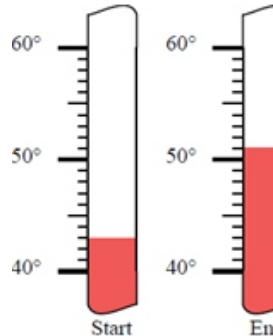
ii.



iii.



iv.

**2. Convert the following temperatures to Fahrenheit scale:**i. 45°C ii. 180°C iii. 210°C iv. 70°C v. 21°C vi. 69°C vii. 85°C viii. 99°C **3. Convert the following temperatures to Celsius scale:**i. 54°F ii. 18°F iii. 121°F iv. 75°F v. 51°F vi. 119°F vii. 105°F viii. 79°F

4. Solve: (Give your answer in Fahrenheit)

- | | |
|--|---|
| i. $110^{\circ}\text{C} + 250^{\circ}\text{F}$ | ii. $80^{\circ}\text{C} + 125^{\circ}\text{F}$ |
| iii. $90^{\circ}\text{F} + 125^{\circ}\text{C}$ | iv. $65^{\circ}\text{F} + 50^{\circ}\text{C}$ |
| v. $70^{\circ}\text{C} - 100^{\circ}\text{F}$ | vi. $90^{\circ}\text{C} - 105^{\circ}\text{F}$ |
| vii. $90^{\circ}\text{F} - 25^{\circ}\text{C}$ | viii. $65^{\circ}\text{F} - 0^{\circ}\text{C}$ |

- 5.** The maximum temperature on a hot day in the month of June is 43°C . What is the maximum temperature on Fahrenheit scale?
- 6.** If the normal body temperature of human body is 98.6°F . What is the normal temperature on a Celsius scale?
- 7.** One day the temperature at 11:00 a.m. was 39°F , and by 2:00 p.m. the temperature was 51°F . What was the change in temperature?
- 8.** In the morning the temperature was 110°F . By the noon time it has gone up by 15° Fahrenheit. What was the noon temperature? (Give your answer in Centigrade)
- 9.** Maqsood records the temperature as 45°C . A thunderstorm comes and the temperature drops by 11° centigrade. What is the temperature after the thunderstorm? (Give your answer in Fahrenheit)

Review Exercise 5

1. Four possible options have been given. Encircle the correct one.

i. 1 cm = _____ mm

- (a) 100 (b) 10 (c) $\frac{1}{10}$ (d) $\frac{1}{100}$

ii. 1 metre = _____ Km

- (a) 1000 (b) 100 (c) $\frac{1}{10}$ (d) $\frac{1}{1000}$

iii. 1 cm = _____ m

- (a) 100 (b) 10 (c) $\frac{1}{10}$ (d) $\frac{1}{100}$

iv. 1 day = _____ hours

- (a) 24 (b) 12 (c) $\frac{1}{12}$ (d) $\frac{1}{24}$

v. 1 hour = _____ days

- (a) 24 (b) 12 (c) $\frac{1}{12}$ (d) $\frac{1}{24}$

vi. To convert Celsius scale to Fahrenheit scale we:

- (a) multiply given temperature by $\frac{9}{5}$ and add 32 to the product.
- (b) multiply given temperature by $\frac{5}{9}$ and add 32 to the product.
- (c) subtract 32 from the given temperature and multiply the difference by $\frac{9}{5}$.
- (d) subtract 32 from the given temperature and multiply the difference by $\frac{5}{9}$.

- vii. To convert Fahrenheit scale to Celsius scale we:
- multiply given temperature by $\frac{9}{5}$ and add 32 to the product.
 - multiply given temperature by $\frac{5}{9}$ and add 32 to the product.
 - subtract 32 from the given temperature and multiply the difference by $\frac{9}{5}$.
 - subtract 32 from the given temperature and multiply the difference by $\frac{5}{9}$.
- viii. In Celsius scale the distance between the boiling point of water and freezing point of water is divided into how many equal parts?
- (a) 180 (b) 100 (c) 150 (d) 200
- ix. In Fahrenheit scale the distance between the boiling point of water and freezing point of water is divided into how many equal parts?
- (a) 180 (b) 100 (c) 150 (d) 200
- x. On a Fahrenheit scale the boiling point of water is:
- (a) 100 (b) 180 (c) 200 (d) 212
2. Complete the following:
- 1 hour = _____ mins
 - 2 $\frac{1}{2}$ hours = _____ mins
 - 3 hours and 57 mins = _____ mins
 - 4 $\frac{3}{4}$ hours = _____ mins
 - 5 hours and 33 mins = _____ mins
 - 6 $\frac{1}{4}$ hours = _____ mins
3. Write the following as hours and minutes.
- 330 mins = _____ hours _____ minutes

- ii. 260 mins = _____ hours _____ minutes
- iii. 470 mins = _____ hours _____ minutes
- iv. 205 mins = _____ hours _____ minutes
4. Convert the following:
- i. 28 km 540 m to m
- ii. 29 m 25 cm to cm
- iii. 95 cm 6 mm to mm
- iv. 1024 m to km
- v. 321 cm to m
- vi. 1543 mm to cm
5. Convert the following:
- i. 55 weeks to days
- ii. 105 days to weeks and days
- iii. 370 days to months and days
- iv. 100 months to years and months
6. Add:
- i. 3 hrs 42 min 34 sec to 11 hrs 36 min 31 sec
- ii. 27 hrs 37 sec to 18 hrs and 59 min
- iii. 59 min 59 sec to 1 hr 10 min 10 sec
7. Subtract:
- i. 8 hrs 40 min 20 sec from 11 hrs 32 min 10 seconds
- ii. 5 hrs 30 sec from 8 hrs 10 min
- iii. 3 hrs 20 min 45 sec from 6 hrs
8. Solve: (Give your answer in °C)
- i. $118^{\circ}\text{F} + 105^{\circ}\text{C}$ ii. $85^{\circ}\text{C} + 85^{\circ}\text{F}$
- iii. $95^{\circ}\text{F} - 11^{\circ}\text{C}$ iv. $70^{\circ}\text{C} - 85^{\circ}\text{F}$

9. Tahreem left her house at 10:20 a.m. She spent 2 hours and 15 minutes at her friend's house. She spent 1 hour and 30 minutes in the library. She spent 40 minutes at the park. What time will it be at the end of those activities?
10. Chaudhry needs 45 minutes to get ready. He needs 10 minutes to iron his work clothes. He needs 30 minutes to take breakfast. If it is 6:00 a.m. and he needs to be at work by 8:30 a.m. How much spare time does he have?
11. When Aneesa brought her Ammi's coffee, it was at 152°F . But her Ammi forgot about it for a couple of hours. When she drank it, it had cooled to a room temperature of 68°F . Find the difference in temperature of coffee.
12. Razia's Ammi went to the grocery store. Her mother left the house at 5:05 p.m. and returned at 6:23 p.m. How long was her Ammi gone for shopping?
13. Akbar's family drove to their farm house. They left at 7:30 a.m. they stopped after driving for 4 hours and 18 minutes. It took an other 2 hours and 12 minutes to get to the farm house. What time did they arrive there?
14. Nurse Chandni took Tariq's temperature. It was 103.7°F . How much was it above normal temperature of human body?
(Normal temperature of human body is 98.6°F)
15. The weather forecaster stated that the maximum temperature for the day was 102°F and the minimum temperature was 78°F . What is the difference between the two recorded temperatures?

16. The boiling point of water is 212°F , and the freezing point is 32°F . What is the difference between these 2 temperatures?
17. Today's temperature was 37°C . The maximum temperature for today was 43°C , and the minimum temperature was 12°C . What is the difference between today's temperature and the maximum temperature? Also find the difference between today's temperature and the minimum temperature.

SUMMARY

- We can convert Kilometres to metres by multiplying the kilometres with 1000.
- We can convert metres to centimetres by multiplying the metres with 100.
- We can convert millimetres to metres by dividing the millimetres by 1000.
- For changing metres to kilometres we divide the metres by 1000.
- For changing centimetres to metres we divide the centimetres by 100.
- For changing millimetres to centimetres we divide the millimetres by 10.
- Calendars are used to keep the records of days, weeks, months and years.
- 1 hour = 60 minutes.
- 1 minute = $\frac{1}{60}$ hour.
- 1 minute = 60 seconds.
- 1 year = 12 months
- 1 month = $\frac{1}{12}$ year

- 1 month = 30 days
- 1 day = $\frac{1}{30}$ months
- 1 week = 7 days
- 1 day = $\frac{1}{7}$ week
- Temperature is defined as the degree of heat present in an object, measured by a thermometer.
- Celsius Scale: The basic unit of temperature for everyday applications and use is Celsius scale, in which 0°C corresponds to the freezing point of water and 100°C is its boiling point. It is widely known as Centigrade scale because the difference between freezing and boiling points of water is divided into 100 equal intervals called degrees Centigrade ($^{\circ}\text{C}$).
- Fahrenheit Scale: Another unit of temperature is Fahrenheit, are used to record surface temperature measurements by meteorologists in the United States. In Fahrenheit scale 32°F is freezing point and 212°F is the boiling point of water. In Fahrenheit temperatures scale the difference between freezing and boiling points of water, is divided into 180 equal intervals called degree Fahrenheit ($^{\circ}\text{F}$).
- To convert Celsius to Fahrenheit we multiply the given temperature by $\frac{9}{5}$ and add 32 to the product.
- To convert Fahrenheit to Celsius we subtract 32 from Fahrenheit temperature and multiply the distance by $\frac{5}{9}$ the difference.