Ch. - 14
Time and Temperature
Warm - up Exercise.

Q.1 Add.

(a) 5 hours 20 minutes 40 sec. + 5h 15m 10 sec.

Sol:-

	5 hours	20 min.	40 sec.
+	5 hours	15 min.	10 sec.
	10 hours.	35 min.	50 sec.

(b) 6 hours 50 min. 20 sec. + 7 hours 55 min. 45 sec.

Sol:-

	6 hours	50 min.	20 sec.
+	7 hours	55 min.	45 sec
	13 hours.	10 5 min	6 5 sec

= 13 hours + (60 + 45) min + (60 + 5) sec.

14 hours 46 min 5 sec

= 14 hours 46 min. 5 sec. Ans

(c) 8 weeks 5 days + 7 weeks 1 day + 4 weeks 6

Sol:-

	8 weeks	5 days
	7 weeks	1 day
+	4 weeks	6 days
	19 weeks	12 days

= 19 weeks + 7 days + 5 days

= 19 weeks + 1 week + 5 days

= 20 weeks 5 days Ans

Q.2 Subtract

a. 18 minutes 40 seconds from 35 min. 20 sec.

Sol:-

34 Minutes (60+20) sec.
~~35~~ minutes ~~20~~ sec.
− 18 Minutes 40 sec.
16 Minutes 40 sec.

b. 1 hours 10 minutes 45 seconds from 2H 10 min. 10 seconds.

1 (60+9) Min. (60+10) sec
~~2~~ hours 10 Minutes ~~10~~ Seconds
− 1 hours 10 Minutes 45 Seconds
0 hours. 59 Minutes 25 Seconds

= 59 Minutes 25 Seconds.

Q.3 Convert:

(a) 87 days into months and days.

Sol:- 87 days = ~~3~~0 days + 30 days + 27 days

= 2 months 27 days.

(b) 10 Min. 10 sec. into seconds.

Sol:- 10 Min 10 Sec. = 10 × 60 Sec. + 10 Sec.
= 600 Sec. + 10 Sec.
= 610 Sec.

Q.4 An event in the school started at 10:30 a.m. and finished at 1:15 p.m. for how long did it last?

Sol:- School started = 10:30 AM
finished = 1:15 PM

$$\begin{array}{rl} & {}^{12}\ (60+15)=75 \\ \text{required time} = & \cancel{13}:15\ \text{PM} \\ - & 10:30 \\ \hline & 02:45 \end{array}$$

required time 02 hours 45 min.

Checkpoint 14A

Q.1 Multiply the following:

(a) 6 hour 05 minutes by 3

Sol:-

$$\begin{array}{r} 6\ \text{hours}\ 05\ \text{minutes} \\ \times \quad 3 \\ \hline 18\ \text{hours}\ 15\ \text{minutes} \end{array}$$ Ans

(b) 40 Minutes 10 seconds by 3

Sol:-

$$\begin{array}{r} 40\ \text{Minutes}\ 10\ \text{seconds} \\ \times \quad 3 \\ \hline 120\ \text{min.}\ 30\ \text{seconds} \end{array}$$

= 60 Min + 60 Min. + 30 Sec.
= 1 h + 1 h + 30 Sec
= 2 hours 30 seconds Ans

(c) 5 hours 12 Minutes 25 seconds by 5

Sol:-

$$\begin{array}{r} 5 \text{ hours } 12 \text{ min. } 25 \text{ seconds} \\ \times \quad 5 \\ \hline 25 \text{ hours } 60 \text{ min. } 125 \text{ seconds} \end{array}$$

$= 25 \text{ hours} + 60 \text{ min} + (60+60) \text{ sec} + 5 \text{ seconds}$

$= 24 \text{ hours} + 1\text{h} + 1\text{h} + 2 \text{ min} + 5 \text{ seconds}$

$=$ 1 Day 2 hours 2 minutes 5 seconds.

Divide the following:

(a) 6 hours 10 minutes ÷ 2

Sol:-

$$2 \overline{)\ 6 \text{ hours } 10 \text{ minutes}}$$

3

~~6 hours~~ ~~6 minutes~~

$$\frac{6 \text{ hours}}{2} \qquad \frac{10 \text{ minutes}}{2}$$

3 hours 5 minutes Ans

Q. Divide 6 days 16 hours 25 minutes by 5

Sol:-

	Days	hours	minutes
5	6	16	25
	− 5		

1 day

× 24

24 hours + 16 hours

= 40 hours

$$5 \overline{)\ 40 \text{ hours}} \quad 8$$

− 40 hours

0 hours 25 minutes

= 25 minutes

$$5 \overline{)\ 25 \text{ minutes}} \quad 5 \text{ min.}$$

− 25

0 minutes

Thus, 6 days 16 hours 25 minutes ÷ 5

= 1 day 8 hours 5 minutes.

Ex. 14 B.

1. A machine works every day for 3 hr 40 min 50 sec. to print books. for how long will it work in a week if every day it works for the same time duration?

Sol:- Machine works every day = 3 hr 40 min 50 sec.

required time in a week = 3 hr 40 min 50 sec × 7

21 hr 28 0 m 35 0 sec

= 21 hours + 280 min + 350 sec

= 21 hours + (60 + 60 + 60 + 60) + 40 min + (60 + 60 + 60 + 60 + 60 + 50 sec)

= 21 hours + 4 hours + 40 min + 5 min + 50 sec

= 25 hours + 45 min + 50 seconds

= 24 hours + 1 hours + 45 min + 5 second

= 1 day 1 hour 45 min 50 seconds Ans

2. Considering that the average normal heartbeat of an adult is 70 times in a minute, calculate how many times will it beat in 5 hours 15 min.

Sol:- Average heartbeat of an adult in 1 minutes = 70 times.

5 hours 15 minutes = 5 × 60 min. + 15 min.

= 300 min + 15 min

= 315 min.

required No. = 315 × 70

$$
\begin{array}{r|l}
70 & 315 \\
 & 280 \\ \hline
 & 35
\end{array}
$$

= 315
× 70
000
2205×
22050

Total No. 22050 times.

3. Raghubir takes 4 rounds of a park in 2 hours 58 min. 40 sec. How much time will he take to complete one round of the park if he completes each round in the same time duration?

Sol:- Time taken by Raghubir in 4 rounds
= 2 h 58 min 40 sec.

To complete one round = $\frac{2h\ 58min\ 40sec}{4}$

4) 2h 58 Min. 40 sec
×60
(120 + 58) Min.
= 178 Min

44 Min.
4) 178 Min
- 16 ↓
× 18
16
× 2 Min
× 60
= 120 sec + 40 sec.

= 160 sec.

40 sec.
4) 160 Seconds
160
×

Thus, 2h 58 Min 40 sec. = 44 Min. 40 seconds

4. If a Man sleeps for 7 hours 30 Min. everyday, then calculate in days and hours he will sleep in a months

Sol:- Man sleeps everyday = 7h 30 Min

required time in a month = 7h 30 min
× 30
210 h 90 min

~~60h~~. ~~60h + 60h + 60h + 30h + 60 min + 30m~~

8 day
24) 210 h
192
× 18 h

= 8 day 18h + 1h + 30 min

= 8 day 19h 30 min.

5. Raghu works for 23 days 5 hours and 40 minutes every month. Calculate his working time in a year days, hours and min

Sol:-

Raghu works every month = 23 d 5 h 40 m

required Time = 23 days 5 h. 40 Min.

$$= 276 \text{ day} + 60\text{h} + \frac{48\ 0 \text{ min}}{60} \quad (\times\ 12)$$

= 276 days + 60h + 8 hours

= 276 days + (24 + 24 + 12)h + 8h

= 288 days + 20 h.

= 288 days 20 hours Ans

$$C = \frac{5(F - 32)}{9}$$

I. $C = \frac{5 \times (F - 32)}{9}$

II. $F = 32 + \frac{9 \times C}{5}$

Do as directed:

Convert 70°C into °F

we know that

$$^{\circ}F = 32 + \frac{9 \times C}{5}$$

$$^{\circ}F = 32 + \frac{9 \times 70}{5}$$

$$^{\circ}F = 32 + \frac{630}{5}$$

$$^{\circ}F = 32 + 126$$

$$^{\circ}F = 158$$

Thus, $70^{\circ}C = 158^{\circ}F$ Ans

Convert $212^{\circ}F$ into °C

we know that

$$^{\circ}C = \frac{5(F-32)}{9}$$

$$= \frac{5 \times (212-32)}{9}$$

$$= \frac{5 \times 180^{20}}{9}$$

$$^{\circ}C = 5 \times 20$$

$$^{\circ}C = 100$$

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