



Class-5

Subject-Mathematics

Chapter-12 (Time)

Lecture- 02

Conversion of time:

Example 1: Convert into seconds: a) 1 hour, b) 1 day, c) 30 days

Solution:

a) 1 hour

= (1×60) minutes [\because 1 hour = 60 minutes]

= 60 minutes

= (60×60) seconds [\because 1 minutes = 60 seconds]

= 3600 seconds

Ans: 3600 seconds.

b) 1 day

= (1×24) hours [\because 1 day = 24 hours]

= 24 hours

= (24×60) minutes [\because 1 hour = 60 minutes]

= 1440 minutes

= (1440×60) seconds [\because 1 minutes = 60 seconds]

= 86400 seconds

Ans: 86400 seconds.

c) 30 days

$$= (30 \times 24) \text{ hours } [\because 1 \text{ day} = 24 \text{ hours}]$$

$$= 720 \text{ hours}$$

$$= (720 \times 60) \text{ minutes } [\because 1 \text{ hour} = 60 \text{ minutes}]$$

$$= 43200 \text{ minutes}$$

$$= (43200 \times 60) \text{ seconds } [\because 1 \text{ minutes} = 60 \text{ seconds}]$$

$$= 2592000 \text{ seconds}$$

Ans: 2592000 seconds.

Example 2: Express the following time in month, day and hour. (Suppose that 30 days = 1 month)

a) 1000 hours, b) 8000 hours

Solution:

a) 1000 hours

$$= (1000 \div 24) \text{ days } [\because 1 \text{ hour} = \frac{1}{24} \text{ days}]$$

$$= 41 \text{ days} + 16 \text{ hours}$$

$$= (41 \div 30) \text{ months} + 16 \text{ hours } [\because 1 \text{ day} = \frac{1}{30} \text{ months}]$$

$$= 1 \text{ month} + 11 \text{ days} + 16 \text{ hours}$$

$$= 1 \text{ month } 11 \text{ days } 16 \text{ hours}$$

Ans: 1 month, 11 days and 16 hours.

$$\begin{array}{r} 41 \\ \hline 24 \overline{) 1000} \\ \underline{96} \\ 40 \\ \underline{24} \\ 16 \end{array}$$

$$\begin{array}{r} 1 \\ \hline 30 \overline{) 41} \\ \underline{30} \\ 11 \end{array}$$

b) 8000 hours

$$= (8000 \div 24) \text{ days } [\because 1 \text{ hour} = \frac{1}{24} \text{ days}]$$

$$= 333 \text{ days} + 8 \text{ hours}$$

$$= (333 \div 30) \text{ months} + 8 \text{ hours } [\because 1 \text{ day} = \frac{1}{30} \text{ months}]$$

$$= 11 \text{ months} + 3 \text{ days} + 8 \text{ hours}$$

$$= 11 \text{ months } 3 \text{ days } 8 \text{ hours}$$

Ans: 11 months, 3 days and 8 hours.

$$\begin{array}{r} 333 \\ 24 \overline{) 8000} \\ \underline{72} \\ 80 \\ \underline{72} \\ 80 \\ \underline{72} \\ 8 \end{array}$$

$$\begin{array}{r} 11 \\ 30 \overline{) 333} \\ \underline{30} \\ 33 \\ \underline{30} \\ 3 \end{array}$$

Exercise

1. Answer the following question: (Suppose that 1 month = 30 days)

- Convert 5 months to hours.
- Convert 2 years to hours.
- Convert 10 years to days
- Convert 12 years 5 months to days.
- Express 100000 minutes in month, day, hour and minutes.
- Express 10000 seconds in hour, minute and second.

The 24 – hour clock:

The 24 – hour clock is the convention of time keeping in which the day runs from midnight to midnight and is divided into 24 hours. The 24 – hour notation uses 2 digit numbers for hours and minutes, putting colon “:” (colon) between hour and minute as shown below:

Method to read the 24 – hour clock

23:59

Twenty – three fifty – nine

24-hour time

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

a.m. p.m.

12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11

12-hour time

**** The 24 – hour clock does not use “a.m.” or “p.m.”**

The 12 – hour clock	The 24 – hour clock
6:00 a.m.	06:00
1:00 p.m.	13:00
12:00 a.m.	00:00

Example 1: Convert the following time written in the 12 – hour clock to the 24 – hour clock.

a) 8:00 p.m. b) 10:45 a.m. c) 3:20 a.m. d) 11:58 p.m.

Solution:

a) 8:00 p.m. is equivalent to 20:00 in 24 hour clock.

$$\begin{array}{r} 12:00 \\ + 8:00 \\ \hline 20:00 \end{array}$$

b) 10:45 a.m. is equivalent to 10:45 in 24 hour clock.

c) 3:20 a.m. is equivalent to 03:20 in 24 hour clock.

d) 11:58 p.m. is equivalent to 23:58 in 24 hour clock.

$$\begin{array}{r} 12:00 \\ + 11:58 \\ \hline 23:58 \end{array}$$

Example 2: Convert the following time written in the 24 – hour clock to the 12 – hour clock.

a) 07:00 b) 12:05 c) 19:24 d) 23:59

Solution:

a) 07:00 is equivalent to 7:00 a.m.

b) 12:05 is equivalent to 12:00 p.m.

c) 19:24 is equivalent to 7:24 p.m.

$$\begin{array}{r} 19:24 \\ - 12:00 \\ \hline 7:24 \end{array}$$

d) 23:59 is equivalent to 11:59 p.m.

$$\begin{array}{r} 23:59 \\ - 12:00 \\ \hline 11:59 \end{array}$$

Exercise

1. Convert the following time written in the 12 – hour clock to the 24 – hour clock.

a) 3:00 p.m. b) 11:42 p.m. c) 0:20 a.m. d) 12:00 a.m.

2. Convert the following time written in the 24 – hour clock to the 12 – hour clock.

a) 02:04 b) 15:34 c) 24:00 d) 21:13

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