

SESSION : 24
CLASS : IV
SUBJECT : MATHEMATICS
CHAPTER NUMBER : 15
CHAPTER NAME : TIME AND CALENDAR
SUBTOPIC : OPERATIONS ON TIME MEASURES,
EX-15 D Q.NO. 1 TO 6

CHANGING YOUR TOMORROW

LEARNING OBJECTIVE

- Enable the students to understand about the operations on time measures.

OPERATIONS ON TIME MEASURES

Example : 1 Add 10 minutes 50 seconds and 15 minutes 40 seconds.

Solution :

Step 1 : Add the seconds first. $50 + 40 = 90$ seconds

$90 \text{ sec} = 60 \text{ sec} + 30 \text{ sec} = 1 \text{ minute } 30 \text{ sec.}$

Write the 30 under the second's column and carry over 1 to minute's column.

	Min.	Sec.
		1
	1 0	50
+	1 5	40
<hr/>		
	2 6	30
<hr/>		

	Sec.
	50
+	40
<hr/>	
	90
<hr/>	

Step 2 : Add the minutes. $10 + 15 + 1(\text{carry over}) = 26$ minutes

Write 26 under the minute's column.

Ans. 26 minutes 30 seconds



OPERATIONS ON TIME MEASURES

Example : 2 Add 3 hours 40 minutes 20 seconds, 6 hours 24 minutes 30 seconds and 7 hours 30 minutes 40 seconds.

Solution :

Step 1 : Add the sec. $20 + 30 + 40 = 90$ seconds
 $90 \text{ sec} = 60 \text{ sec} + 30 \text{ sec} = 1 \text{ min } 30 \text{ sec}.$

Write the 30 under the second's column and carry over 1 to minute's column.

Step 2 : Add the minutes. $40 + 24 + 30 + 1(\text{carry over})$
 $95 \text{ min.} = 60 \text{ min} + 35 \text{ min} = 1 \text{ hour } 35 \text{ min}.$

Write 35 under the minute's column and carry over 1 to the hour's column.

Step 3 : Add the hours. $3 + 6 + 7 + 1(\text{carry over}) = 17 \text{ Hr}$
Write 17 hours the under hour's column.

	Hr.	Min.	Sec.
	3	40	20
	6	24	30
+	7	30	40
<hr/>			
	17	35	30
<hr/>			

	Min.
	1
	40
	24
+	30
<hr/>	
	95
<hr/>	
	Sec.
	20
	30
+	40
<hr/>	
	90
<hr/>	

Ans. 17 Hr 35 Min 30 Sec



OPERATIONS ON TIME MEASURES

Example : 3 Add 4 days 16 hours 40 minutes, 3 days 10 hours 20 minutes and 10 days 20 hours 10 minutes.

Solution :

Step 1 : Add the minutes. $40 + 20 + 10 = 70$ min
 70 min = 60 min + 10 min = 1 hour 10 .

Step 2 : Add the hours. $16 + 10 + 20 + 1$ (carry over)
 47 Hr. = 24 hr + 23 hr = 1 day 23 hr.

Step 3 : Add the days. $4 + 3 + 10 + 1$ (carry over) = 18 days

	d.	hr.	min.
	1	1	
	4	16	20
	3	10	30
+	10	20	40
	18	23	10

	hour
	1
	16
	10
+	20
	47
	30
	40
	20
+	10
	70

Ans. 18 days 23 hours 10 minutes



OPERATIONS ON TIME MEASURES

Example : 4 Find the difference between 8 hours 16 minutes 15 seconds and 6 hours 24 minutes 30 seconds.

Solution :

Step 1 : Start with seconds. Since $15 < 30$, borrow 1 min
 $1 \text{ min} + 15 \text{ sec.} = 75 \text{ seconds.}$
 $75 - 30 = 45 \text{ seconds.}$

Step 2 : subtract the minutes. 16 minutes have become 15 minutes since we borrowed 1 minute. $15 < 24$. borrow 1 hour from 8 hours. $(60 + 15) - 24 = 51$ minutes. [\because 1 hour = 60 minutes]

Step 3 : subtract the hours. $7 - 6 = 1$ hour
[8 hour have become 7 hours since we borrowed 1 hour.]

Hr.	Min.	Sec.	Min.
8	16	15	75
-	6	24	30
<hr/>			<hr/>
1	51	45	51
<hr/>			<hr/>
			sec.
			75
			- 30
			<hr/>
			45
			<hr/>



Ans. 1 hour 51 minutes 45 seconds

OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

Try to add orally.

1. 20 minutes + 50 minutes + 10 minutes. = **80 minutes** or **1 hour 20 minutes**

2. 10 seconds + 40 seconds + 32 seconds. = **82 seconds** or **1 minute 22 seconds**

3. 16 minutes 20 seconds + 20 minutes 35 seconds. = **36 minutes 55 seconds**

4. 10 minutes 16 seconds + 16 minutes 24 seconds + 12 minutes 45 seconds.

= **39 minutes 25 seconds**



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

5. add

a)	Hours	minutes	seconds
	1	1	
	14	20	15
	16	45	45
+	6	30	30
<hr/>			
	37	36	30
<hr/>			

$$\begin{array}{r} \text{Sec.} \\ 15 \\ 45 \\ + 30 \\ \hline 90 \\ \hline \end{array}$$

90 sec = 60 sec + 30 sec = 1 minute 30 sec.

$$\begin{array}{r} \text{min.} \\ 1 \\ 20 \\ 45 \\ + 30 \\ \hline 96 \\ \hline \end{array}$$

96 min = 60 min + 36 min = 1 hour 36 min.



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

5. add

b)	Hours	minutes	seconds
	1	1	
	6	50	40
	7	35	55
+	8	20	18
<hr/>			
	22	46	53
<hr/>			

$$\begin{array}{r} \text{Sec.} \\ 40 \\ 55 \\ + 18 \\ \hline 113 \\ \hline \end{array}$$

113 sec = 60 sec + 53 sec = 1 minute 53 sec.

$$\begin{array}{r} \text{min.} \\ 1 \\ 50 \\ 35 \\ + 20 \\ \hline 96 \\ \hline \end{array}$$

106 min = 60 min + 46 min = 1 hour 46 min.



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

5. add

c)	Hours	minutes	seconds
	1	1	
	14	20	15
	8	45	25
+	6	30	30
<hr/>			
	29	36	10
<hr/>			

$$\begin{array}{r} \text{Sec.} \\ 15 \\ 25 \\ + 30 \\ \hline 113 \\ \hline \end{array}$$

70 sec = 60 sec + 10 sec = 1 minute 10 sec.

$$\begin{array}{r} \text{min.} \\ 1 \\ 20 \\ 45 \\ + 30 \\ \hline 96 \\ \hline \end{array}$$

96 min = 60 min + 36 min = 1 hour 36 min.



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

5. add

d)	Hours	minutes	seconds
	1	1	
	16	25	40
	17	35	25
+	8	12	18
<hr/>			
	42	13	23
<hr/>			

$$\begin{array}{r} \text{Sec.} \\ 40 \\ 25 \\ + 18 \\ \hline 83 \\ \hline \end{array}$$

83 sec = 60 sec + 23 sec = 1 minute 23 sec.

$$\begin{array}{r} \text{min.} \\ 1 \\ 25 \\ 35 \\ + 12 \\ \hline 73 \\ \hline \end{array}$$

73 min = 60 min + 13 min = 1 hour 13 min.



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

6. Subtract

a) Hours minutes seconds

$$\begin{array}{r} 9 \quad 16 \quad 24 \\ - 8 \quad 05 \quad 14 \\ \hline 1 \quad 11 \quad 10 \\ \hline \end{array}$$



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

6. Subtract

b)	Hours	minutes	seconds
	16	56	45
-	4	23	13
<hr/>			
	12	33	32
<hr/>			



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

6. Subtract

c)	Hours	minutes	seconds
	24		
	25	14	13
-	15	23	28
<hr/>			
	9	50	45
<hr/>			

Since $13 < 28$, borrow 1 min
 $1 \text{ min} + 13 \text{ sec.} = 73 \text{ seconds.}$

$$\begin{array}{r} \text{Sec.} \\ 73 \\ - 28 \\ \hline 45 \end{array}$$

14 minutes have become 13 minutes since we borrowed 1 minute. $13 < 23$.
borrow 1 hour = $60 + 13 = 73 \text{ minutes.}$

$$\begin{array}{r} \text{min.} \\ 73 \\ - 23 \\ \hline 50 \end{array}$$



OPERATIONS ON TIME MEASURES

EXERCISE – 15(D)

6. Subtract

d)

Hours	minutes	seconds
7		
8	23	12
- 5	45	33
<hr/>		
2	37	39
<hr/>		

Since $12 < 33$, borrow 1 min
 $1 \text{ min} + 12 \text{ sec.} = 72 \text{ seconds.}$

	Sec.
	72
-	33
<hr/>	
	39
<hr/>	

23 minutes have become 22 minutes since we borrowed 1 minute. $22 < 45$.
borrow 1 hour = $60 + 22 = 82$ minutes.

	min.
	82
-	45
<hr/>	
	37
<hr/>	



HOME ASSIGNMENT:

- **Complete Exercise – 15 Q.NO. 1 TO 6 in your note book.**

LEARNING OUTCOME:

Students are able to understand the operations on time measures.

THANKING YOU
ODM EDUCATIONAL GROUP