

2.1.22
Thursday

Chapter -20

Time



Exercise -20(A)

1. Convert.

a) 15 hrs into minutes

$$1 \text{ hr} = 60 \text{ min}$$

$$15 \text{ hr} = 15 \times 60 = 900 \text{ min}$$

b) 9 hr 56 min into minutes

$$1 \text{ hr} = 60 \text{ min}$$

$$\begin{aligned} 9 \text{ hr} &= 9 \times 60 + 56 \\ &= 540 + 56 = 596 \text{ min} \end{aligned}$$

c) 36 min into sec

$$1 \text{ min} = 60 \text{ sec}$$

$$36 \text{ min} = 36 \times 60 = 2160 \text{ sec}$$

d) 12 min 28 sec into seconds

$$1 \text{ min} = 60 \text{ seconds}$$

$$12 \text{ min} = 12 \times 60 = 720 + 60 \\ = 780 \text{ sec}$$

e) 5 days into hours.

$$1 \text{ day} = 24 \text{ hrs}$$

$$5 \text{ days} = 5 \times 24 \\ = 120 \text{ hrs}$$

f) 12 days 9 hrs into hours.

$$1 \text{ day} = 24 \text{ hr}$$

$$12 \text{ day } 9 \text{ hr} = 12 \times 24 + 9 \\ = 288 + 9 \\ = 297 \text{ hrs.}$$

2. Convert :-

a) 5 years 9 months into months

$$1 \text{ year} = 12 \text{ months}$$

$$5 \text{ years} = 12 \times 5 \\ = 60 \text{ months}$$

$$5 \text{ years } 9 \text{ months} = 60 + 9 \\ = 69 \text{ months}$$

b) 9 weeks into days

$$1 \text{ week} = 7 \text{ days}$$

$$9 \text{ weeks} = 9 \times 7 = 63 \text{ days}$$

c) 12 weeks 15 days into days

$$1 \text{ week} = 7 \text{ days}$$

$$12 \text{ weeks} = 12 \times 7 = 84$$

$$12 \text{ weeks } 15 \text{ days} = 84 + 15 \\ = 99 \text{ days}$$

d) 7 weeks into hours

$$\begin{aligned}1 \text{ week} &= 7 \text{ days} \\7 \text{ weeks} &= 7 \times 7 = 49 \text{ days} \\1 \text{ day} &= 24 \text{ hours} \\49 \text{ days} &= 49 \times 24 \\&= 1176 \text{ hours}\end{aligned}$$

e) 12 weeks 10 hours into hours.

$$\begin{aligned}1 \text{ week} &= 7 \text{ days} \\12 \text{ weeks} &= 12 \times 7 = 84 \text{ days} \\1 \text{ day} &= 24 \text{ hours} \\84 \text{ days} &= 84 \times 24 \\&= 2016 \text{ hours}\end{aligned}$$

f) 2 years 10 months into hours

$$\begin{aligned}1 \text{ year} &= 12 \text{ months} \\2 \text{ years} &= 12 \times 2 = 24 \text{ months} \\2 \text{ years } 10 \text{ months} &= 24 + 10 \\&= 34 \text{ months}\end{aligned}$$

3. Convert :-

a) 1 day into seconds

$$1 \text{ day} = 24 \text{ hours}$$

$$1 \text{ hour} = 60 \text{ min}$$

$$24 \text{ hours} = 24 \times 60 \\ = 1440 \text{ min}$$

$$1 \text{ min} = 60 \text{ sec}$$

$$1440 \text{ min} = 1440 \times 60 \\ = 86400 \text{ sec}$$

b) 5 weeks into seconds

$$1 \text{ week} = 7 \text{ days}$$

$$5 \text{ weeks} = 5 \times 7 = 35 \text{ days}$$

$$1 \text{ day} = 24 \text{ hours}$$

$$35 \text{ days} = 35 \times 24 = 840 \text{ hours}$$

$$1 \text{ hour} = 60 \text{ min}$$

$$840 \text{ hours} = 840 \times 60 \\ = 50400 \text{ min}$$

$$1 \text{ min} = 60 \text{ sec}$$

$$50400 \text{ min} = 50400 \times 60 \\ = 3024000 \text{ sec}$$

c) 2 months into sec

$$1 \text{ month} = 30 \text{ days}$$

$$2 \text{ months} = 30 \times 2 = 60 \text{ days}$$

$$1 \text{ day} = 24 \text{ hrs}$$

$$60 \text{ days} = 60 \times 24 = 1440 \text{ hrs}$$

$$1 \text{ hr} = 60 \text{ min}$$

$$1440 \text{ hrs} = 1440 \times 60 = 86400 \text{ min}$$

$$1 \text{ min} = 60 \text{ sec}$$

$$86400 \text{ min} = 86400 \times 60 \\ = 5184000 \text{ sec}$$

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4. Convert :-

a) 812 seconds into minutes and seconds

$$812 \text{ sec} = 812 \div 60 \\ = 13 \text{ min } 32 \text{ sec}$$

$$\begin{array}{r} 13 \\ \hline 60 \overline{) 812} \\ \underline{60} \\ 212 \\ \underline{180} \\ 32 \end{array}$$

b) 924 minutes into hours and minutes

$$924 \text{ min} = 924 \div 60 \\ = 15 \text{ hours } 24 \text{ minutes}$$

$$\begin{array}{r} 14 \\ \hline 60 \overline{) 924} \\ \underline{60} \\ 324 \\ \underline{240} \\ 84 \end{array}$$

c) 105 hours into days and hours

$$105 \text{ hours} = 105 \div 24 \\ = 4 \text{ days } 9 \text{ hours}$$

$$\begin{array}{r} 4 \\ \hline 24 \overline{) 105} \\ \underline{96} \\ 9 \end{array}$$

d) 745 hours into days and hours

$$745 \text{ hours} = 745 \div 24$$
$$= 31 \text{ days } 1 \text{ hour}$$

$$\begin{array}{r} 31 \\ 24 \overline{) 745} \\ \underline{72} \\ 25 \\ \underline{24} \\ 1 \end{array}$$

e) 1024 minutes into hours and minutes

$$1024 \text{ minutes} = 1024 \div 60$$
$$= 17 \text{ hours } 4 \text{ min}$$

$$\begin{array}{r} 17 \\ 60 \overline{) 1024} \\ \underline{60} \\ 424 \\ \underline{420} \\ 4 \end{array}$$

5. Convert :-

a) 512 days into weeks and days

$$512 \text{ days} = (512 \div 7)$$

$$= 73 \text{ weeks } 1 \text{ day}$$

$$\begin{array}{r} 73 \\ 7 \overline{) 512} \\ \underline{49} \\ 22 \\ \underline{21} \\ 1 \end{array}$$

b) 365 days into weeks and days

$$365 \text{ days} = (365 \div 7)$$

$$= 52 \text{ weeks } 1 \text{ day}$$

$$\begin{array}{r} 52 \\ 7 \overline{) 365} \\ \underline{35} \\ 15 \\ \underline{14} \\ 1 \end{array}$$

c) 52 months into years and months

$$52 \text{ months} = (52 \div 12)$$

$$= 4 \text{ years } 4 \text{ months}$$

$$\begin{array}{r} 4 \\ 12 \overline{) 52} \\ \underline{48} \\ 4 \end{array}$$

d) 86 months into years and months

$$86 \text{ months} = (86 \div 12)$$

$$= 7 \text{ years } 2 \text{ months}$$

$$\begin{array}{r} 7 \\ 12 \overline{) 86} \\ \underline{84} \\ 2 \end{array}$$

e) 342 days into months and days

$$342 \text{ days} = (342 \div 30)$$

$$= 11 \text{ months } 12 \text{ days}$$

$$\begin{array}{r} 11 \\ 30 \overline{) 342} \\ \underline{30} \downarrow \\ 42 \\ \underline{30} \\ 12 \end{array}$$

f) 784 days into months and days

$$784 \text{ days} = (784 \div 30)$$

$$= 26 \text{ months } 4 \text{ days}$$

$$\begin{array}{r} 26 \\ 30 \overline{) 784} \\ \underline{60} \downarrow \\ 184 \\ \underline{180} \\ 4 \end{array}$$

6. Convert :-

a) 16 hours 600 seconds into minutes

$$16 \text{ hours} = 16 \times 60 \\ = 960 \text{ minutes}$$

$$600 \text{ seconds} = \frac{600}{60} = 10 \text{ minutes}$$

$$960 + 10 \text{ minutes} = 970 \text{ minutes}$$

b) 9 hours 360 seconds into minutes

$$9 \text{ hours} = 9 \times 60 \\ = 540 \text{ minutes}$$

$$360 \text{ seconds} = \frac{360}{60} = 6 \text{ minutes}$$

$$540 + 6 \text{ minutes} = 546 \text{ minutes}$$

c) 2 days 180 minutes into hours

$$2 \text{ days} = 2 \times 24 \\ = 48 \text{ hours}$$

$$180 \text{ minutes} = \frac{180}{60} = 3 \text{ hours}$$

$$48 + 3 \text{ hours} = 51 \text{ hours}$$

d) 9 days 420 minutes into hours.

$$9 \text{ days} = 9 \times 24 \\ = 216 \text{ hours}$$

$$420 \text{ minutes} = \frac{420}{60} = 7 \text{ hours}$$

$$216 + 7 \text{ hours} = 223 \text{ hours}$$