TIME & WORK

→ A → 1 day → 2 Apples.

⇒ 5 days ⇒ 10 App.

⇒ No. of days ⇒ 20 Apples.

$\frac{20}{2}$ ⇒ 10 days

2 × 2

2 × 3

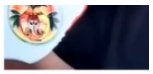
2 × 4

$\Rightarrow$ No. of days =

N days

$\Rightarrow 2 \times N = 20$

$\therefore N = 10$ days



1 day $\rightarrow$ 3 Apples.

$\Rightarrow$ 5 days $\rightarrow$ 15

$3 \times 2 \Rightarrow$

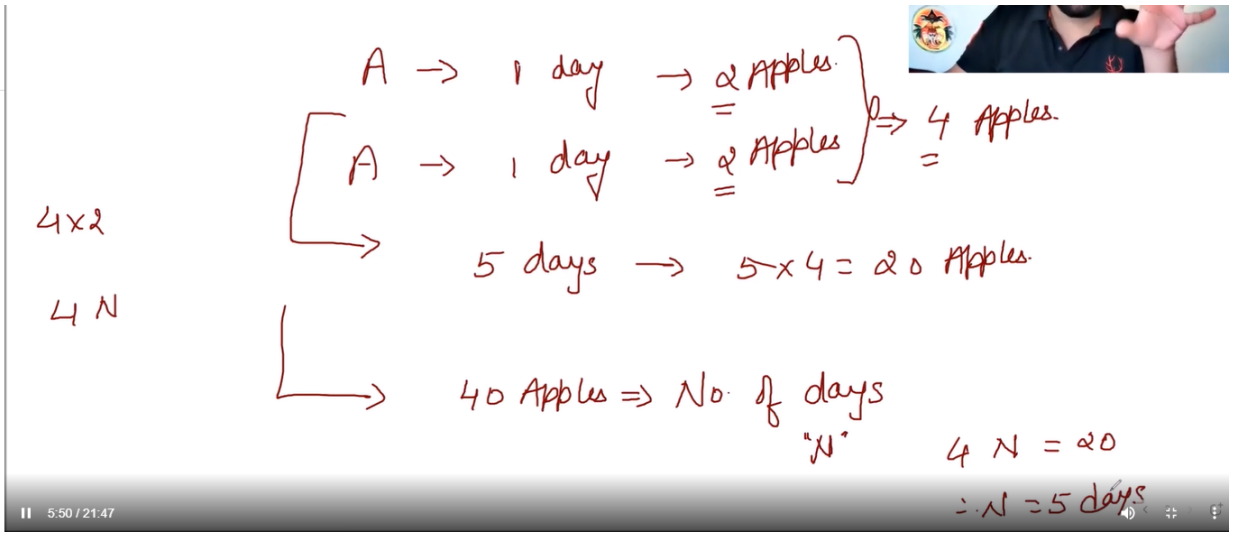
3 × 3

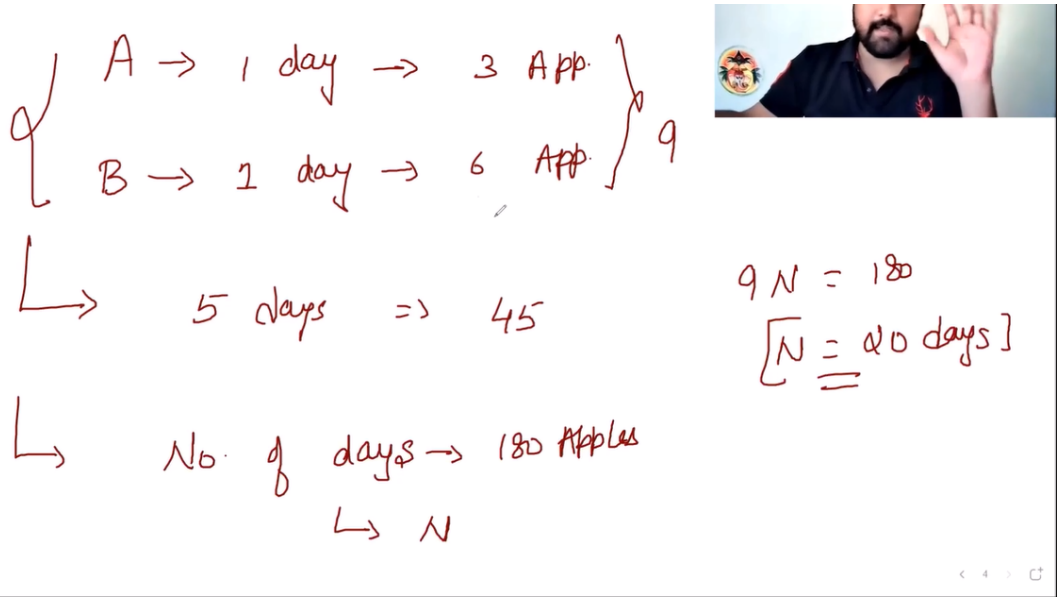
3 × 4

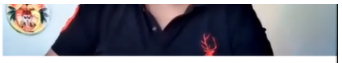
$\Rightarrow$ No. of days $\Rightarrow$ 30 Apples.

N

$3 \times N = 30 \quad \therefore [N = 10 \text{ days}]$


A → 1 day → 2 Apples
A → 1 day → 2 Apples
⇒ 4 Apples
5 days → 5 × 4 = 20 Apples
4 × 2
4 N
40 Apples ⇒ No. of days
"N"
4 N = 20
∴ N = 5 days
5:50 / 21:47


A → 1 day → 3 App.
B → 1 day → 6 App.
9
5 days ⇒ 45
No. of days → 180 Apples
N
9 N = 180
[N = 20 days]



$\frac{3}{4} \times 2$

A → 2 days → 1 ⇒ $\frac{1}{2}$

B → 4 days → 1 ⇒ $\frac{1}{4}$

$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

$\frac{3}{4} \times 3$

$\frac{3}{4} \times N$

5 days → $\frac{3}{4} \times 5 \Rightarrow \frac{15}{4}$ Apples.

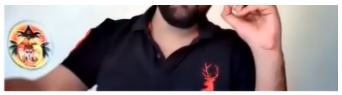
No. of days ⇒ 12 Apples ∴ $\frac{3}{4} N = 12$ ∴ $N = 16$

↳ "N"

Efficiency ⇒ $\frac{1}{T_i} \downarrow W.$

A → 5 days ⇒ 1 day → $\frac{1}{5}^{th}$

B → 6 days ⇒ 1 day ⇒ $\frac{1}{6}^{th}$



A does → 4 days → Eff$_A$ → $\frac{1}{4}^{th}$

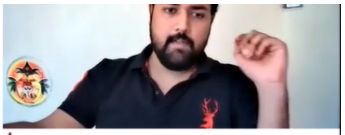
B does → 5 days → Eff$_B$ → $\frac{1}{5}^{th}$ + $\frac{1}{4}+\frac{1}{5}=\frac{9}{20}$

→ No. of days → finish → work together

→ "N" $\frac{9}{20} \times 20$

$\frac{9}{20} \times N = 1$ $\therefore [N = \frac{20}{9} \text{ days}]$

17:03 / 21:47



20

LCM of

A → 4 days → 20 units → 1 → 5 units/day

B → 5 days → 20 units → 1 → 4 units/day

$5 + 4 = 9$ units/day.

No. of days → "N"

9×2

$9 \times N = 20$

$[N = \frac{20}{9} \text{ days}]$

A can finish a work in 10 days and B can finish the same work in 20 days. If they work together, what will be the total time taken to finish the work?

A → 10 days → 1 unit

B → 20 days → 1 unit

No. of days ⇒ "N"

$\frac{3}{20} \times 2$

$\frac{3}{20} \times N = 1 \quad \therefore \boxed{N = \frac{20}{3}}$

A → $\frac{1}{10}$ unit

B → $\frac{1}{20}$ unit

+

$\frac{1}{10} + \frac{1}{20} = \frac{3}{20}$

A → 10 days → 20 units

⇒

B → 20 days → 20 units

"N" ⇒ $3N = 20$

$N = \frac{20}{3}$ days

Eff A → 2 units

+

Eff B → 1 unit

] 3 units

A can complete work in 30 days and B can complete in 20 days. A works for 5 days and then B joins him. In how many days after B joins, the work will get completed?

A → 30 days → 60 units

B → 20 days → 60 units

2×5 ⇒ 10 units ⇒ 50 units

Eff A → 2 units

Eff B → 3 units

} 5 units

"N"

5×2

5×3

5N

5N = 50 ∴ N = 10 days

A can finish a work in 5 days and B can finish the same work in 6 days. If they work on alternate days, what will be the total time taken to finish the work if A started with the work first.

A → 5 days → 30 units → Eff A → 6 units/day

B → 6 days → 30 units → Eff B → 5 units/day

A B A B A B ⇒ N days

6 5 6 5 6

11 + 11 + 6 ⇒ 28 units

∴ 5.4 days

5N = 27

N = 27/5 = 0.4 days

A can finish a work in 8 days and B can finish the same work in 12 days. If they work on alternate days, what will be the total time taken to finish the work if B started with the work first.

A → 8 days → 24 units → Eff$_A$ = 3 units/day

B → 12 days → 24 units → Eff$_B$ = 2 units/day

B A B A B A B A B A

2 3 2 3 5 5 2

5 + 5 + 5 + 5 + 2 units

22

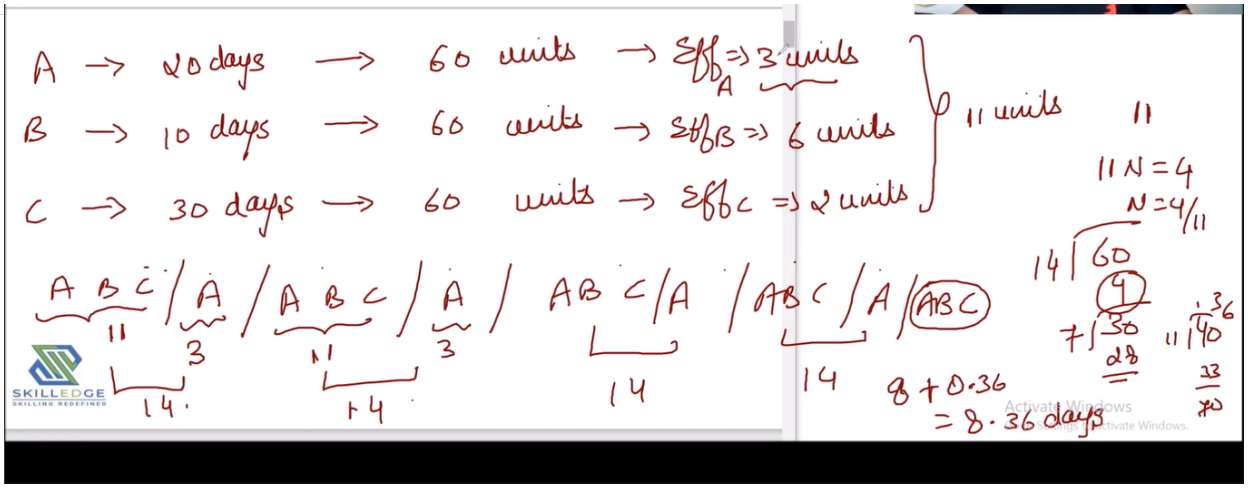
5 | 24 (4)
20
4

9.66 days

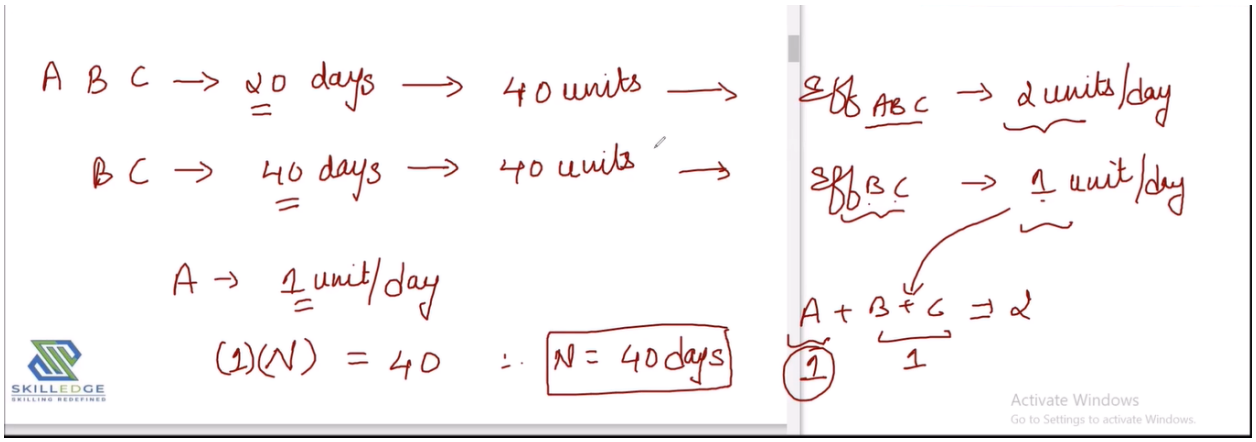
$3N = 2$

$N = \frac{2}{3} = 0.66$

A can complete work in 20 days, B can complete in 10 days and C can complete the work in 30 days. A works daily and B and C works along with A on alternate days. In how many days the work will get completed if all three of them work together on the first day.



A, B and C together can complete a work in 20 days. B and C can complete the same work in 40 days. In how many days A alone can complete the same work?



A, B and C together can complete a work in 20 days. A can do the work in 30 days. In how many days can B and C together finish the work?

A B C → 20 days → 60 units

A → 30 days → 60 units

Eff BC → 1 unit/day

(1) N = 60 ∴ N = 60 days

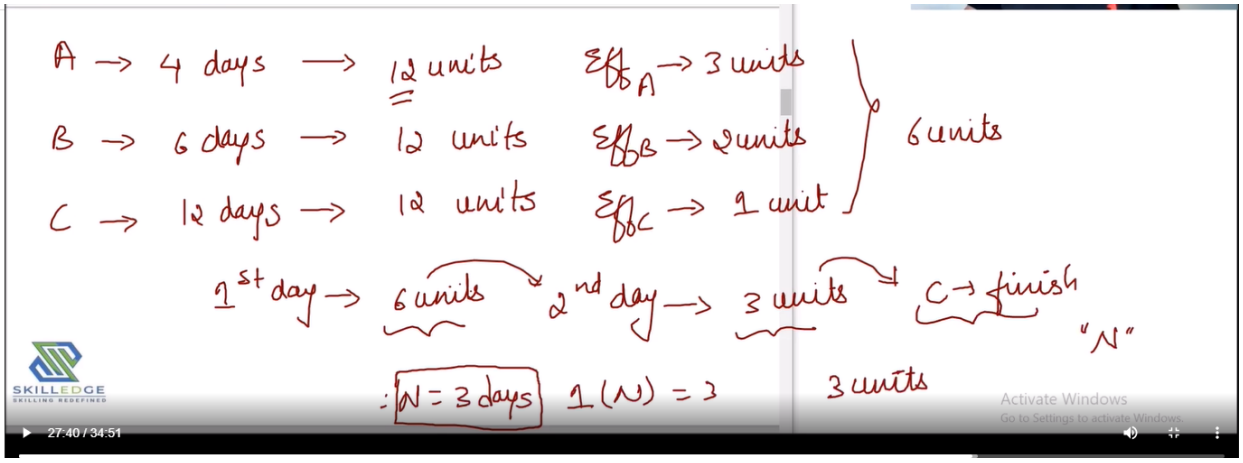
Eff ABC → 3 units/day

Eff A → 2 units/day

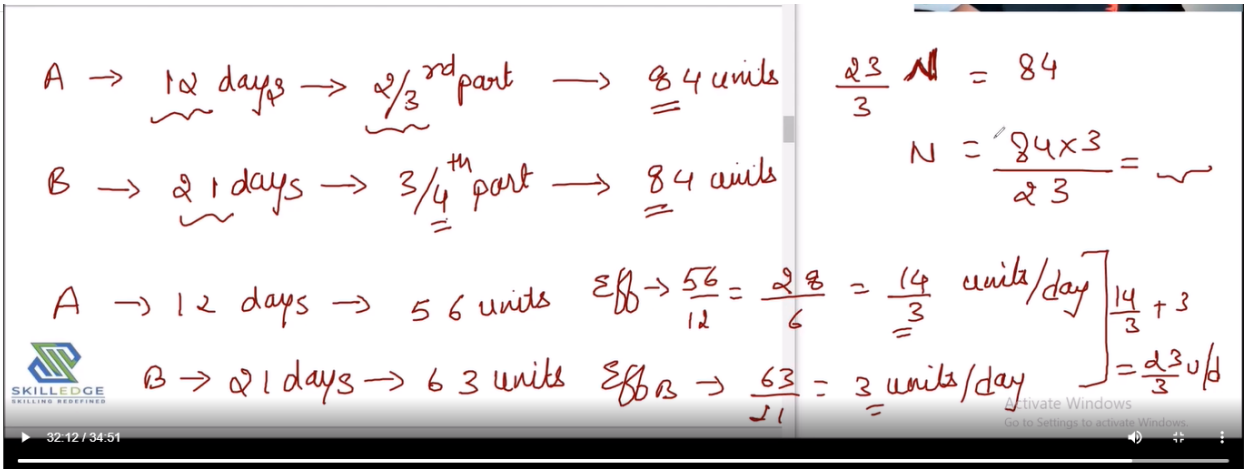
A + B + C → 3

2 "1"

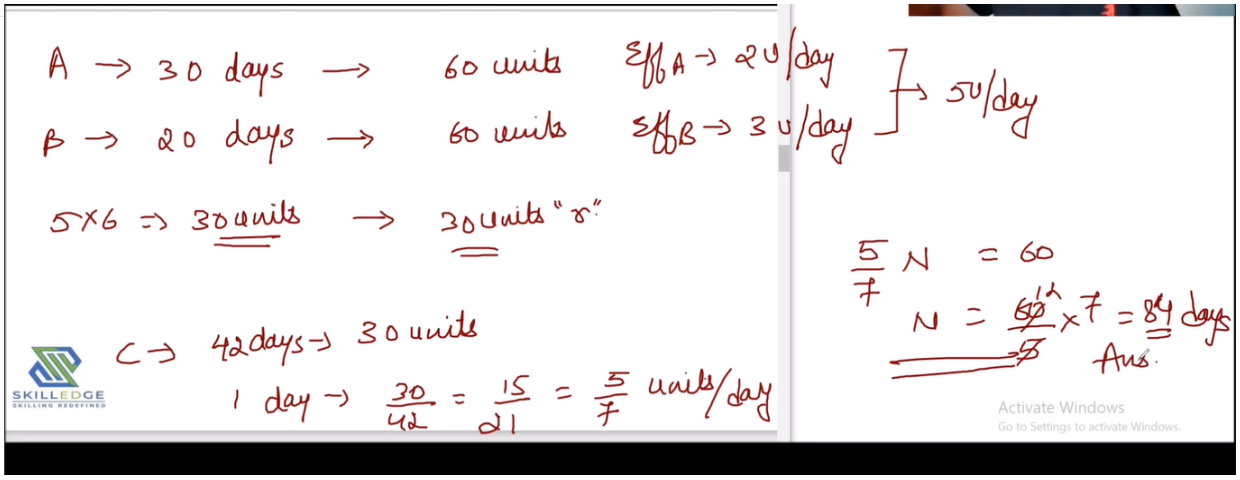
A,B and C working alone can finish the job in 4,6 and 12 days. All three of them work together for 1 day and A leaves, then B and C work together for 1 day and B leaves. C finishes the rest of the work. Find the time taken by C to finish the remaining work?



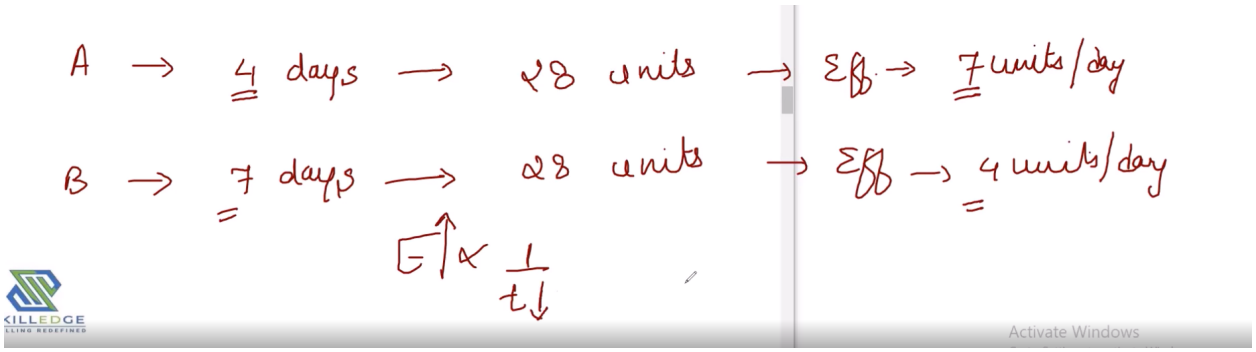
A can finish 2/3 part of work in 12 days and B can finish 3/4 part of the same work in 21 days. If they work together, what will be the total time taken to finish the work?



A takes 30 days and B takes 20 days to complete the work. They work together and for 6 days and then leaves. C finishes remaining work in 42 days. In how many days can C alone finish the work?



A is 5 times as efficient as B. A takes 80 days less than B to complete the work. In how many days the work will get completed if they work together?



Eff A : B
7 : 4 | 4 : 7

A → 4 days → 28 units → Eff → 7 units/day

B → 7 days → 28 units → Eff → 4 units/day

E ↑ ∝ 1/t ↓

E ⇒ A : B
2 : 3
3 : x

Eff A = 5 Eff B

Eff A / Eff B = 5/1

∴ $T_A / T_B = 1/5$

"x" days
5x days

TA = 20 days
TB = 100 days

x + 80 = 5x

4x = 80

[x = 20]

Eff A = 5 Eff B

Eff A / Eff B = 5/1

∴ $T_A / T_B = 1/5$

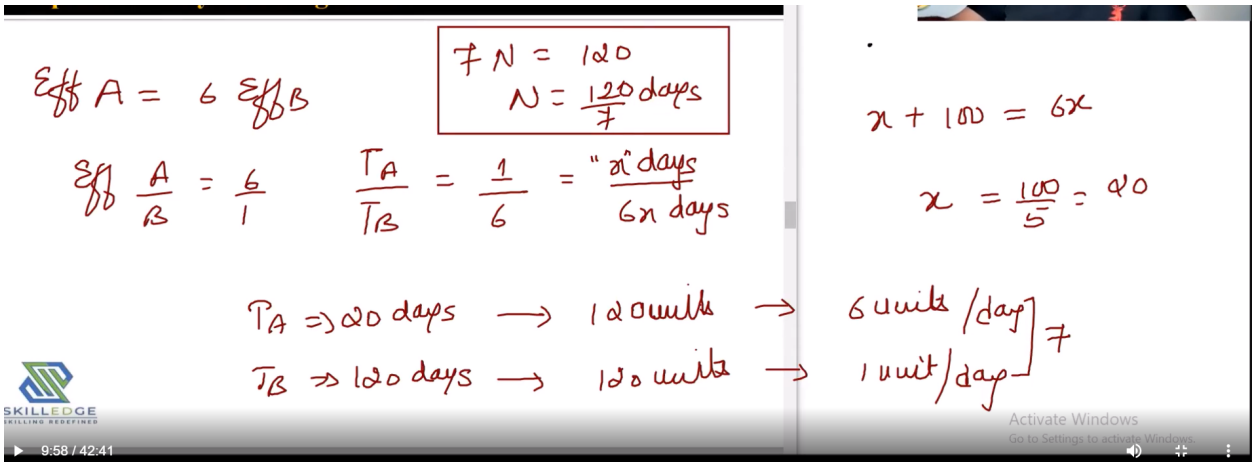
"x" days
5x days

TA = 20 days
TB = 100 days

A → 20 days → 100
B → 100 days → 100
→ 5 u/day
→ 1 u/day
→ 6 units/day

[6N = 100 ∴ N = 100/6]

A is 6 times as efficient as B. A takes 100 days less than B to complete the work. In how many days the work will get completed if they work together?



A is thrice as efficient as B and B is twice as efficient as C. A,B,C together can finish the work in 12 days. How much time will B take to finish the work?

A B C

6 2 1

$6x + 2x + x \Rightarrow 9x$ u/day

$2x \times 2$

$2x \times 3$

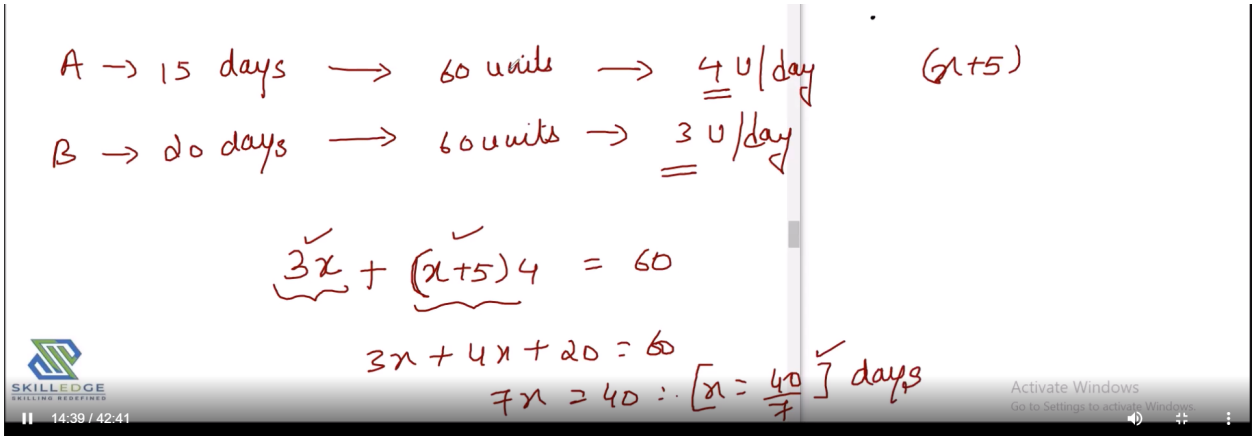
$\therefore$ Tot. $\Rightarrow 9x \times 12$

$= 108x$

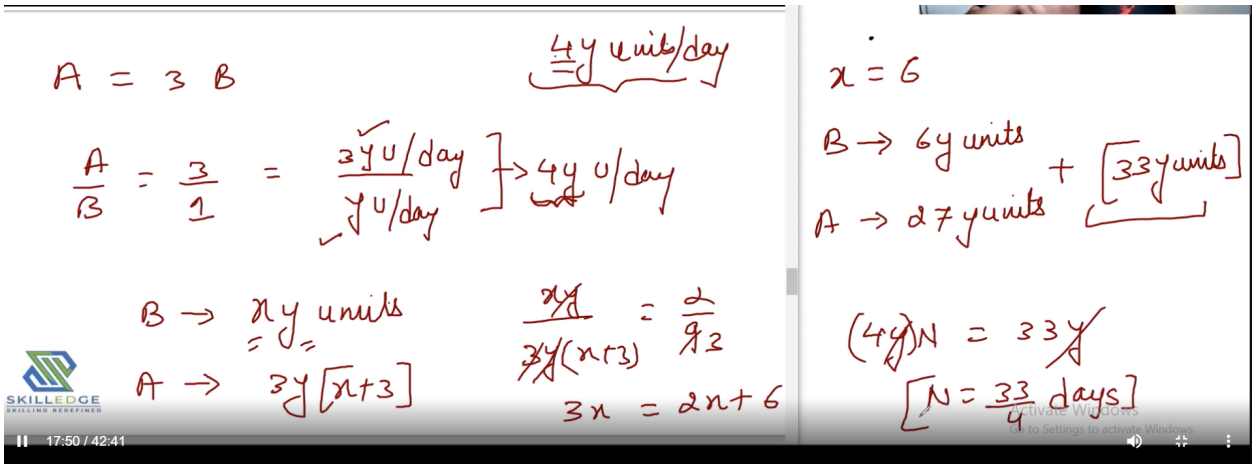
$(2x)N = 108x$

$N = \frac{108}{2} = 54$ days

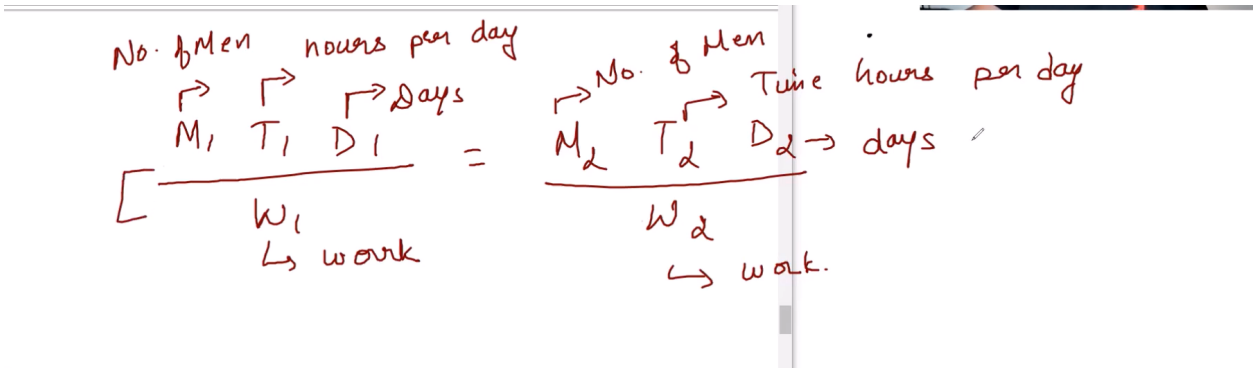
A and B can do a piece of work in 15 and 20 days respectively. They start working together but B leaves after X days and A finishes the rest of the work in (X+5) days. How many days did B work?

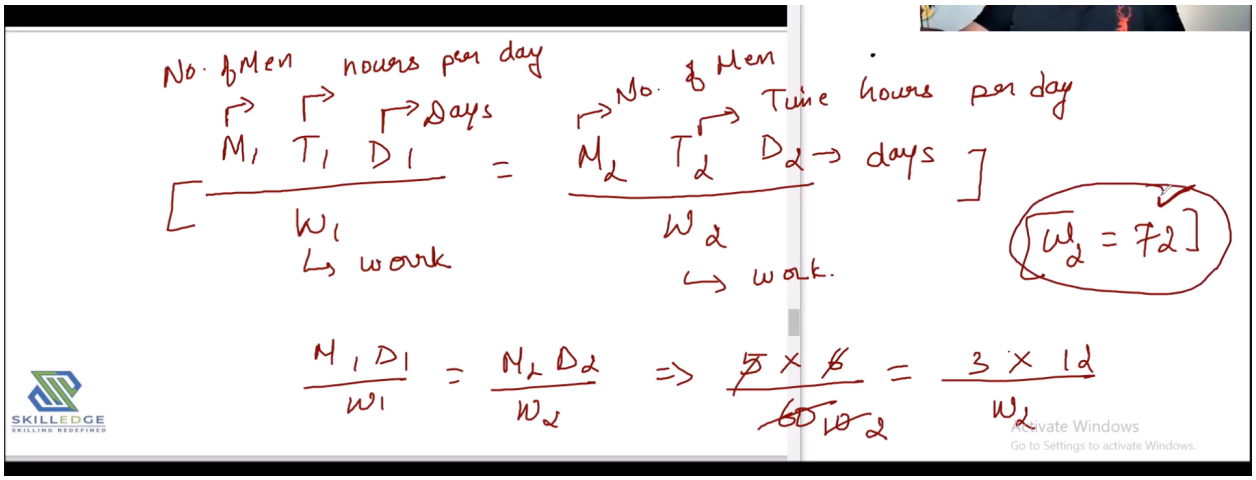


A is 3 times efficient as B. B works for X days and leaves. A finishes rest of the work in X+3 days. Ratio of work done by B and A is 2:9. Find the no. of days in which they can complete the work together?



5 men takes 6 days to complete 60 units of work. Calculate the amount of work done by 3 Men in 12 days?





10 men takes 7 days to complete 70 units of work. Calculate the amount of work done by 2 Men in 14days?

$$\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$$

$$\frac{10 \times 7}{70} = \frac{2 \times 14}{W_2} \qquad \therefore W_2 = 28 \text{ units}$$

6 men working 5 hours daily takes 12 days to complete 120 units of work. Calculate the amount of work done by 6 Men in 14 days working 10 hours daily.

$$\frac{M_1 D_1 T_1}{W_1} = \frac{M_2 D_2 T_2}{W_2}$$

$$\frac{6 \times 5 \times 12}{100} = \frac{6 \times 14 \times 10}{W_2} \qquad \therefore [W_2 = 280 \text{ units}]$$

24:04 / 42:41

6 men completes the work in 18 days and 9 women takes 30 days to complete the same work. If 4 men and 10 women works for 10 days and only men are asked to complete the remaining work in 3 days, How many men would be required?

6 M → 18 days

1 M → [18 × 6] days

[$\frac{1}{18 \times 6}$] ← 1 day

1M 1 day → $\frac{1}{18 \times 6}$

1W 1 day → $\frac{1}{30 \times 9}$

9 W → 30 days

1 W → 30 × 9 days

$\frac{1}{30 \times 9}$ units / day

[$\frac{1}{9 \times 3} \times 4 \times 10$]

[$\frac{10}{27}$ units → already]

[$\frac{1}{30 \times 9} \times 10 \times 10 = \frac{10}{27}$] → already

[$\frac{10}{27}$ units → already] + [$\frac{1}{30 \times 9} \times 10 \times 10 = \frac{10}{27}$] → already

$1 - \frac{20}{27} = \frac{7}{27}$

[$\frac{20}{27}$ units]

29:30 / 42:41

required?

$$\frac{7}{27 \cancel{+} 9} = \left[\frac{1}{18 \times 6} \rightarrow \text{No.} \times x \times 3\right]$$

$$\frac{7}{93} = \frac{x}{124} \quad \therefore \boxed{x = \frac{248}{3}} \text{ Men}$$

6 men completes the work in 18 days and 9 women takes 30 days to complete the same work. If 4 men and 10 women works for 10 days and only men are asked to complete the remaining work in 3 days, How many men would be required?

$\frac{6^{3} \times 18^{9}}{w_1} = \frac{4 \times 10}{w_2} \quad \therefore w_2 = \frac{10}{27} w_1$

$\frac{9 \times 30}{w_1} = \frac{10 \times 10}{w_3} \quad \therefore w_3 = \frac{10}{27} w_1$

$\frac{20}{27} w_1$

$w_1 - \frac{20}{27} w_1$

$= \frac{7}{27} w_1$

$\frac{M \times 3}{\frac{7}{27} w_1} = \frac{6 \times 18}{w_1}$

Hence $M = 2 \times \frac{7}{3} = \frac{14}{3}$

A, B and C completed a work of 30000Rs. A and B together completed 14/20th path of the work . How much amount will C get on completion of work?

30,000

1 unit

$1 - \frac{14}{20} = \frac{6}{20}$

$\frac{6}{20} \times 30,000 = 9000$ Ans

SKILLING REDEFINED

A, B, C completed a work of 12000Rs. A, B and C worked for 4, 6 and 9 days respectively. If their daily wages are in the ratio 3:1:2. How much amount will A get on completion of work?