

Time and Work

1. Different Efficiency. 2. Same Efficiency

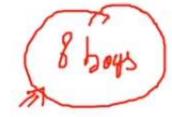
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Time and Work

1. Different Efficiency. 2. Same Efficiency

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Ram and Laxman can do a work in 10 and 15 days respectively. In how many days will both finish the work?



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	Days	Efficiency (per day work)
Ram	10	
Laxman	15	
Ram + Laxman		

Number of days =
$$\frac{Total\ work\ done}{Efficiency} = \frac{30}{5} = 1$$









T= 100

A can paint the walls in 25 days whereas B can paint the same walls in 20 days. If both paint together then, in how many days

the walls can be painted?

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	Days	Per day
Α	25	
В	20	
A+B		



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vork in 20 days and 10 ng together for 4 days



Ellen and Sopnia can complete a work in 20 days and 10	
days respectively. But after working together for 4 days	
Ellen left, and the rest work was completed by Sophia. In	n
how many days the total task will be completed?'	

	Days	Efficiency
Ellen≍	20	1
Sophia	10	2
Ellen + Sophia		3

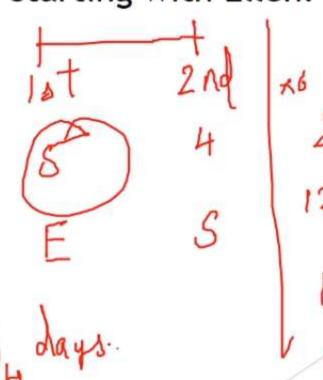
Work done in 4 days = 12

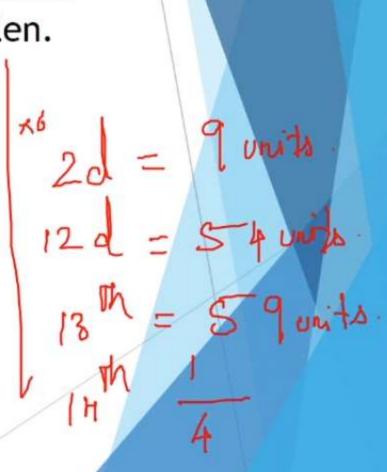


T= 60

Ellen and Sophia can complete a work in 12 days and 15 days respectively. In how many days the total task will be completed if they work alternatively starting with Ellen.

	Days	Efficiency
Ellen	12	5
Sophia	15	4







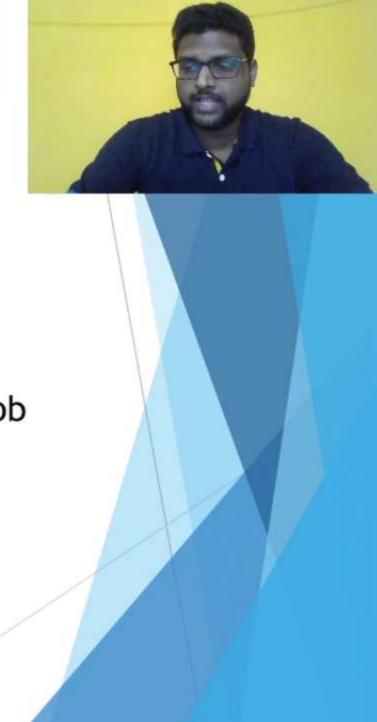
Efficiency and Time

Efficiency is inversely proportional to time.

Example:

If Ram is twice efficient as Laxman,

then Ram will take half of the time to finish the same job as Laxman.





Anjali takes 10 days to complete a task whereas Rahul takes 5 days to complete the same task. What is the ratio of their efficiency and who is less efficient.

	Time	Efficiency
Rahul	5	2
Anjali	10	1



hours to fill the tank and Pipe R can empty the tank in 12 hour How much time will be required for the tank to be filled if the Pipes were opened together simultaneously?

	Hours	Rate of Filling
Р	10	6
Q	15	4
R	12	5
P+QER		5/

Number of hours =
$$\frac{Total\ capacity}{Rate\ of\ filling}$$

60	-12 hs.
5	



P,Q and R can complete a work in 6,8, and 12 days respectively. All work together and after the completion o (3/4)th work Q left and the remaining work is completed by P and R together. Then in how many days the total

work will be completed?

	No. of days	Efficiency
Р	6	(8)
X	8	6_
R	12	(A)

Total work	(¾) th of work
48	36

12 Umis - Tolays



A can do a piece of work in 20 days, B in 24 days and C in 30 days. They all start the work together, but A leaves after 4 da and B leaves 6 days before the work is completed. How many days did the work last?

	Days	Efficiency
Α	20	6
В	24	5
С	30	4-
A+B+C		15

A1B+C	B+C	<u>C</u>	
60	36	24	-
42	4d_	62	
	4 days.		



Application of Inverse Proportion

$$M_1 \times D_1 = M_2 \times D_2$$

$$\frac{M_1 \times D_1 \times H_1}{W_1} = \frac{M_2 \times D_2 \times H_2}{W_2}$$

$$M_1 \rightarrow D_1 \rightarrow M_1$$

$$M_2 \rightarrow D_2 \rightarrow h_2$$

$$M_1 d_1 d_2 d_2 d_3$$

$$M_1 d_1 h_1 \Rightarrow M_2 d_2 h_2 \Rightarrow$$

$$M_1d_1h_2W_2 = M_2d_2h_2W_1$$

$$M_1d_1h_1 = M_2d_2h_2$$

$$W_2$$



If 20 boys can complete a task in 7 days, then how many boys can complete the same task in 28 days.

$$M_1 \times D_1 = M_2 \times D_2 = Work done$$

$$20 \times 7 = M_2 \times 28$$





If 12 friends can drink 12 Dalgona coffees in 12 minutes, hollong will 27 friends take to drink 27 such Dalgona coffees?

$$\frac{M_1 \times D_1 \times H_1}{W_1} = \frac{M_2 \times D_2 \times H_2}{W_2}$$

$$\frac{12 \times 12}{12} = \frac{127}{27} \times H_{2} = \frac{12}{27} \times H_{2} = 12 \text{ min}$$





Question

I am twice as good as you and therefore able to finish my assignment in 30 days less than you. In how many days we

can complete the whole work, working together.

(Placement Question) T=60 ~ 7

You

	3	-
	Efficiency	
Ме	2	

3

2 oday	_,		
和	. 4		
*	$-\frac{1}{2}$	Ξ	300
1	2		



T= 30

Sheena can build a wall in 10 days and Beena can demolish the same wall in 15 days. If they work alternatively starting from Sheena, then when will the wall build for

the very first time? (Placement Question)

1	No. of days	Efficiency
Sheena	10	13
Beena	15	-2

5 Holans	27 units.
55th.	1300mts
550	ay!

