

Time and Work

Basics

Time taken to Paint a house



= 1 day



= 4 day

Important Points



1. Efficiency $\propto \frac{1}{\text{Time Taken}}$

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

Type 1





If 3 hens give 3 eggs in 3 days then tell how many eggs 6 hens will give in 6 days ?



35 men can make 70 toys in 8 days by working 8 hours a day. How many days will 56 men need to make 84 toys by working 12 hours every day?

Type 2





3 men or 2 women can complete a work in 12 days. In how many days will a Man and a Woman complete it?



4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?

Type 3





A can complete a piece of work in 10 days and B can do it in 20 days. If they work together, how long it will take to complete the work?



A can complete a piece of work in 15 days and B can do it in 30 days. They started working together but after 2 days B left, how many more days it will take to complete the work?



A can complete a piece of work in 14 days and B can do it in 21 days. They started working together but B leaves 2 days before the completion of work, how many days A worked in total?



A can complete a piece of work in 12 days and B can do it in 20 days. If they work together on alternate days starting with A, how long it will take to complete the work?



A can complete a piece of work in 15 days, B can do it in 30 days and C can do it in 20 days. If they work together, how long it will take to complete the work?



A can complete a piece of work in 20 days and A & B can do it in 10 days. If B work alone, how long it will take to complete the work?

Type 3





A and B working together can complete a piece of work in 36 days. B and C can complete the same in 48 days while A and C can do it in 72 days. Find the number of days in which the fastest person can complete the work. Also find the number of days in which the slowest person can complete the work.



Working alone, Raj takes 16 more days than the time taken by him and Sameer together to complete a job. Sameer, working alone, takes 36 more days than the time taken by him and Raj together to complete the job. Find the time taken by Sameer alone to complete the job.



Neha's rate of work is 60% more than that of her brother. If Neha and her brother work together, in how many days will a piece of work be completed, if Neha alone can do it in 65 days?



A and B can complete a piece of work in 45 days and 75 days respectively. If A and B work together and earn ₹7,200, find their individual earnings.



Madhav can complete a piece of work in 36 days, while Nirali can do it in 45 days. Madhav and Nirali, with the help of Pankaj, completed the work in 12 days. If Madhav, Nirali and Pankaj together receive ₹18,000 for the work, what is Pankaj's share in it?

Negative Work





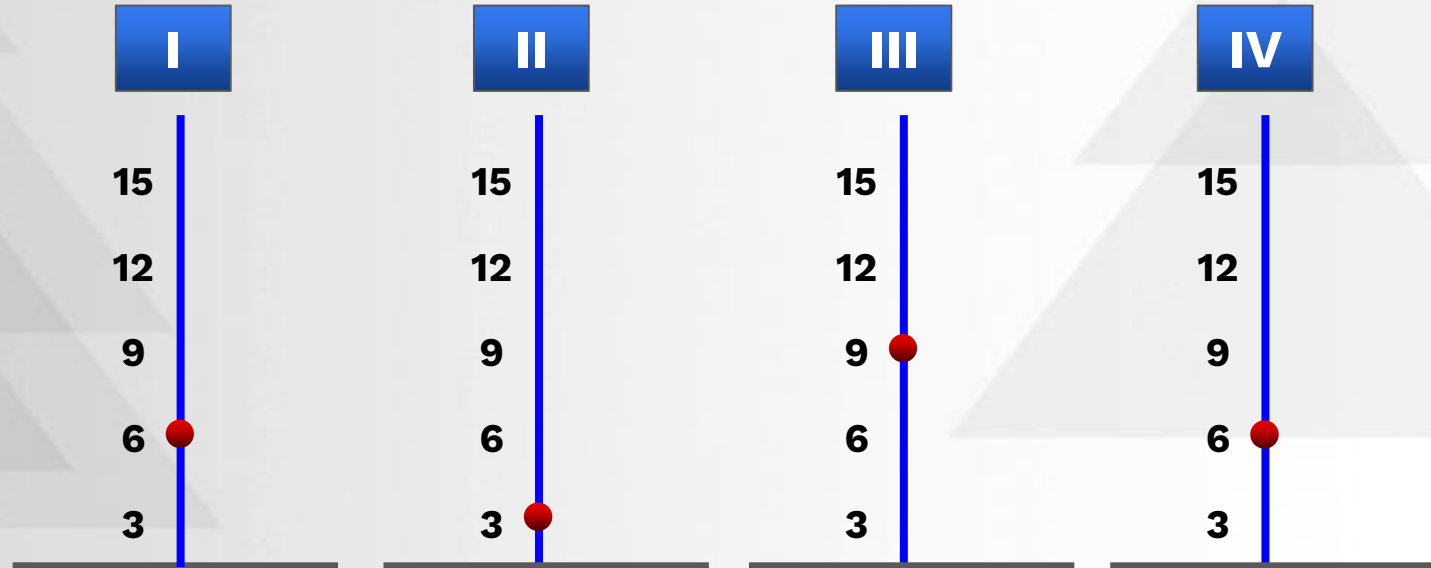
A can complete a piece of work in 18 days and B can do it in 24 days. They started working together but B is doing negative work, so how many days will be required to complete the work?



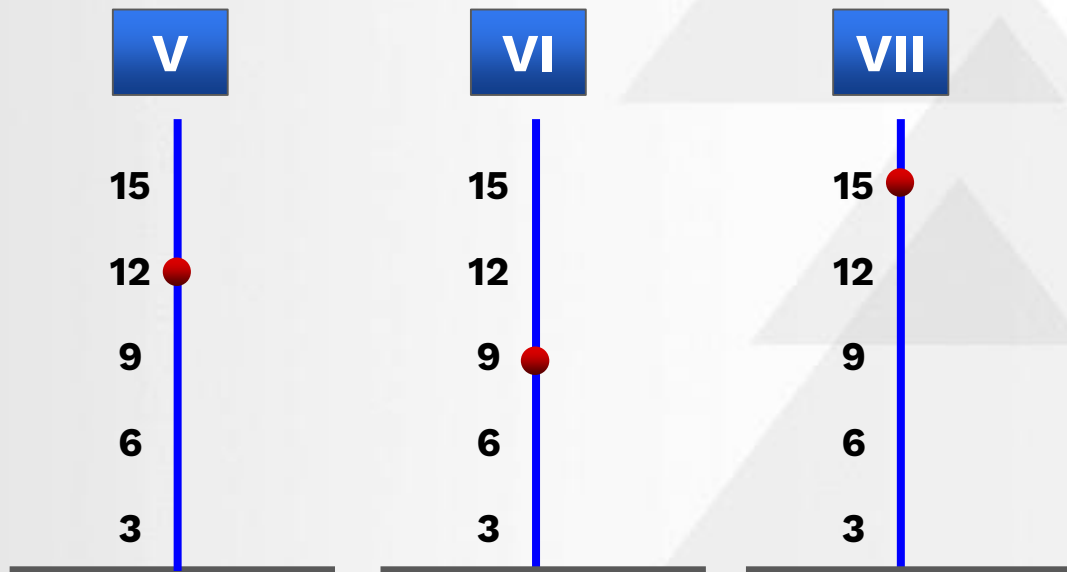
A can complete a piece of work in 14 days and B can do it in 20 days. B is doing negative work, so how many days will be required to complete the work if they work on alternate days starting with A?

Puzzle

In climbing a round pole of 21 metres height, a monkey climbs 6 metres in a minute and slips 3 metres in the alternate minute. How much time would the monkey take to get to the top of the pole?



Puzzle



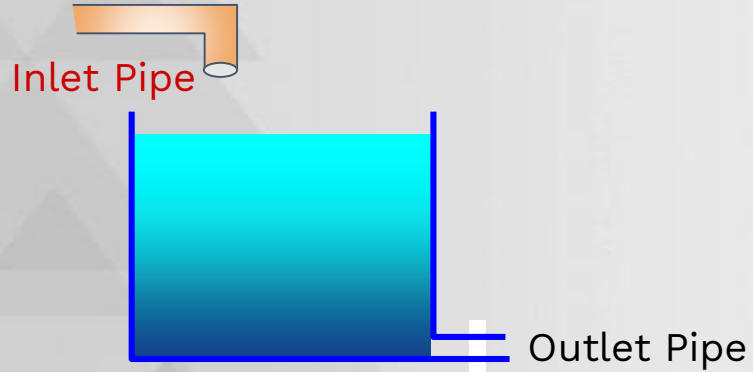


A can complete a piece of work in 20 days and B can do it in 30 days. B is doing negative work, so how many days will be required to complete the work if they work on alternate days starting with A?

Pipes & Cisterns

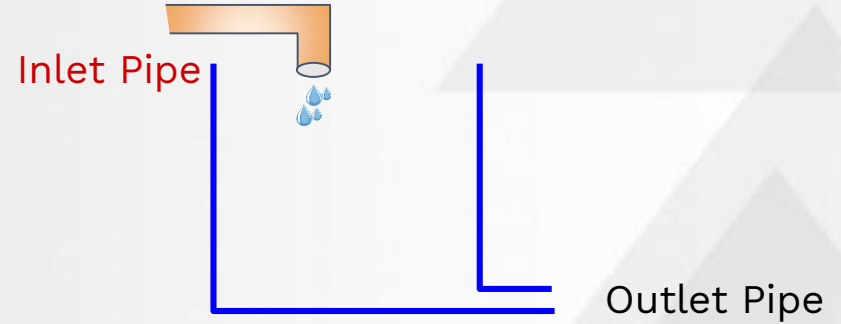


Case No I



**Initial - Full
Task - Empty**

Case No II



**Initial - Empty
Task - Fill**



Three pipes A, B and C are connected to a tank. Out of the three, A and B are the inlet pipes and C is the outlet pipe. If opened separately, A fills the tank in 10 hours, B fills the tank in 12 hours and C empties the tank in 30 hours. If all three are opened simultaneously, how much time does it take to fill the tank ?



If a cistern generally takes 20 min to be filled by a pipe, but due to leak, it takes 10 extra min to be filled, then the amount of time in which the leak can empty the full cistern is _____min



A cistern has two pipes. Both working together can fill the cistern in 12 minutes. First pipe is 10 minutes faster than the second pipe. How much time would it take to fill the cistern if only second pipe is used?



A cistern has a leak which can empty it in 4 hours. A pipe which admits 20 liters of water per hour into the cistern is turned on, and now the cistern is emptied in 6 hours. What is the capacity of the cistern?

