

# Time and Work

## Time and work Formula

Time and work Formula: Knowing the Time and work formulas enables you to immediately connect a problem with a solution after reading the question. The solution and the computations that follow are thus made simpler by knowing the formula for any numerical ability issue.

For your reference, a couple of these crucial time and work formulas are listed below:

- Work = Total Time × Rate of Work
- Rate of Work =  $1 / \text{Total Time}$
- Time Taken for a work =  $1 / \text{Rate of Work}$
- If a Work is completed in  $n$  days/hours, then the work completed on one day/hours is equal to  $1/n$
- Total Work = Efficiency × Number of Days
- If  $x$  people can do  $W_1$  work in  $D_1$  days while putting in  $T_1$  hours per day, and if  $x$  people can complete  $W_2$  work in  $D_2$  days while putting in  $T_2$  hours per day, then the relationship between them will be.  $M_1D_1H_1W_2 = M_1D_2H_2W_1$
- If  $X: Y$  is the ratio of the number of men needed to do a task, then  $Y:X$  is the ratio of the time it will take them to complete the task.

### Things to keep in Mind:

- The relation between Work & Person is directly proportional.
- The relation between Time and work is directly proportional.
- The relation between Time & Person is Inversely proportional.
- Work completed is always regarded as being equal to 1.

## Time and Work Questions

1. A farmer can cultivate 3 bighas of land in 5 days with his one plough. If the total amount of his land is 12 bighas, how long he will take to cultivate that land?
2. 15 agricultural laborers can cultivate 10 bighas of land in a week. To cultivate 18 Bigha land at the same time how many workers are to be appointed?
3. 12 looms in a cooperative handloom factory can weave 380 dhoti-sari per month. 3 new looms have been installed for more work during the Puja season. How many dhoti sarees can be woven in a month now?
4. A small factory produces 3 machines in 15 days. How much time does that factory take to make 4 machines?
5. How many workers are employed to complete the work in 24 days that 12 workers can do in 30 days?
6. A village panchayat volunteer force of 250 men repaired half of a dam in 24 days. To complete the rest of the work, how many more people will it take in the labor force to repair half in 20 days?
7. It takes 7 tractors to cultivate all the land of a cooperative farming farm in one month. Lately, the tractor has become useless. In this situation, how much part of the farm will be cultivated in a month?
8. A piece of work can be done by 4 workers in 18 days. How many days can 12 workers do that work?
9. A carpenter can make 2 cupboards in 5 days. He is quoted as making 10 cupboards received. How long will it take him to finish the job?
10. 24 laborers can cut a pond in 12 days. If a pond of the same size can be cut in 4 days, then how many laborers to hire?
11. 120 meters of village road was built in a week by 35 people working in a village volunteer force. 5 members of the workforce have fallen ill recently. Now, how many long roads will others build in a week?
12. 3 tractors can cultivate 18 bighas of land per day. How many bighas of land will 7 tractors cultivate daily?

13. An independent group is quoted as weaving 117 nets. In 16 days the group weaved 52 nets. How many days will the remaining work be completed?
14. 18 members of a women's cooperative making coconut coir rope 1519 kg in a week Can make rope. How many ropes will they make in 12 days?
15. A and B can do a piece of work alone in 10 and 12 hours respectively. How long will it take if they work together?
16. A, B, and C can each do a piece of work alone in 6, 8, and 12 days respectively. If they work together, how long will it take to finish the job?
17. A, B, and C alone can do a piece of work in 10, 12, and 15 days respectively. How much work will be left after each of them work alone for 2 consecutive days?
18. Rahim working alone can weed a jute field in 24 hours; But his younger brother Karim takes 30 hours; However, if both work together, how many hours will the work be completed?
19. A piece of work can be done by A and B alone in 20 and 30 days respectively. They both left after working together for 7 days. Then C came and alone completed the remaining work in 10 days. C alone can do all the work in how many days?
20. A can do a piece of work in 18 days. He worked at it for 12 days and B finished the remaining work in 8 days. B alone can do the whole work in how many days?
21. A canal of a village can be cleaned by 24 villagers in 12 days. Then how many days in which 36 villagers can clean the canal?
22. A wall of 100 meters can be built by 20 women take to build wall by 7 men or 10 women in 10 days. How many days will 14 men and 20 women take to build a wall of 600 meters?
23. A can do a piece of work in 25 days and B can do the same work in 30 days. They work together for 5 days, how much of the work is left?
24. A can write 80 pages in 20 hours, and A and B together can write 135 pages in 27 hours. Then B can write 20 pages in how many days?