**Time & Work**

Time and work are inversely proportional factors.

Time taken to complete a work =

Rules and Formulae for work related problems

1. If a man can do a piece of work in ‘a’ number of days, then in one day th of work is done. Conversly, if a man doesth of a work in 1 day, then he can complete the work in 1 ÷ = a days.
2. If A is ‘x’ times as good a workman as B, then he will take th of the time taken by B to do the same work.
3. If A and B can do a piece of work in ‘x’ and ‘y’ days respectively, then working together, they will take days to finish the work in one day, they will finish th part of the work.
4. To compare the work done by different people, first find the amount of work each can do in the same time.
5. If the number of the men to do a job is changed in the ratio a : b, then the time required to do the required to do the work will be in the ratio b : a, assuming the amount of work done by each of them is same, or they are identical.
6. If two men A and B together can finish a job in ‘x’ days and if A working alone takes ‘a’ days more than A and B working together and B working alone takes ‘b’ days more than A and B working together then x=
7. Ifn1 men take time t1 to complete a work and n2 men take time t2 complete the same work ,

Then, n1 X t1 = n2 X t2

1. If L, B, H are respectively the length , breadth and height of the wall to be built, while m,t and d are respectively the number of men, amount of time per day and the number of days. And we have two work situation then,

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Examples

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| Example 1 | A group of laborers do a piece of work in 10 days, but five of them are absent and so rest do the work in 12 days, Find the original number of laborers. |
| Solution | Men Days  X 10  x-5 12  So  Or 12x – 60 = 10 x  Or x = 30  So original number of workers are 30 |

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| Example 2 | 2 women, A and B can mow a field in 8 and 12 hours respectively. They work for an hour alternatively, A beginning at 9 a.m. When will the work will be completed? |
| Solution | In the first 2 hours, A and B will mow (  In 8 hrs, , now left work is  Now A works for 1 hour and does Work left = , which B can do in hr.  So total time taken = 8 + 1 + ½ = 9 ½ hrs.  So work will be over at 6:30 p.m. |