



General Rules to Solve Time and Work Problems

Rule 1: Universal Rule

This rule can be used in almost every problem.

If M1 persons can do W1 work in D1 days and M2 persons can do W2 works in D2 days then we can say

$$M1 \times D1 \times W2 = M2 \times D2 \times W1$$

If the persons work T1 and T2 hours per day respectively then the equation gets modified to

$$M1 \times D1 \times T1 \times W2 = M2 \times D2 \times T2 \times W1$$

If the persons has efficiency of E1 and E2 respectively then,

$$M1 \times D1 \times T1 \times E1 \times W2 = M2 \times D2 \times T2 \times E2 \times W1$$

Rule 2: If A can do a piece of work in n days, then the work done by A in one day = $1/n$

Rule 3: If A can do a work in D1 days and B can do the same work in D2 days then A and B together can do the same work in $(D1 \times D2)/(D1 + D2)$ days.

Rule 4: If A is twice as good a workman as B, then A will take half of the time taken by B to complete a piece of work.

Rule 5: If A is thrice as good a workman as B, then A will take one third of the time taken by B to complete a piece of work.

Rule 6: If A and B together can do a piece of work in x days, B and C together can do in y days and C and A together can do in z days, then the same work can be done

By A alone in $2xyz/(xy + yz - zx)$ days.

By B alone in $2xyz/(yz + zx - xy)$ days.

By C alone in $2xyz/(zx + xy - yz)$ days.

By A, B and C together in $2xyz/(yz + zx + xy)$ days.

Rule 7: If A can do a piece of work in D1 days, B can do in D2 days and C can do in D3 days then they together can do the same work in $D1 \times D2 \times D3 / (D1 \times D2 + D2 \times D3 + D1 \times D3)$ days.

Rule 8: If A and B together can do a piece of work in D1 days and A alone can do it in D2 days, then B alone can do the work in $D1 \times D2 / D2 - D1$ days.

Rule 9: If the number of men are changed in the ratio of m:n, then the time taken to complete the work will change in the ratio n:m

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