

Jender Heart High School, Sec. -33B chd.

Class: VIII

Teacher: Ms. Deepa

Subject: Mathematics

Topic: Chapter-11 : Time and Work

The following basic concept of the chapter will be covered:

- Person's one day work
- Total no. of days required to complete a work
- Number of days required to complete the remaining work
- efficiency of the worker

* Work done is inversely proportional to the Time and vice-versa (If a work needs to be increased then the time taken to do that will be less)

General formula's

- If a person can complete a work in n days, then his 1 day work = $\frac{1}{n}$
- If a person can do $\frac{1}{n}$ work in a day then, he needs $\frac{1}{\frac{1}{n}}$ to complete his work
- Number of days required to complete the work = $\frac{\text{Remaining part of work}}{\text{One day's work}}$
- If A is m times as good as B Then
Ratio of work done by A and B in the same time = $m:1$
Ratio of times taken by A and B to finish the work = $1:m$

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Soln 1 A's 1 day work = $\frac{1}{15}$ $\div \frac{A}{B}$

B's 1 day work = $\frac{1}{10}$

(A+B)'s 1 day work = $\frac{1}{15} + \frac{1}{10} = \frac{2+3}{30} = \frac{5}{30} = \frac{1}{6}$

No. of days required to complete = $\frac{1}{(A+B)'s \text{ 1 day work}} = \frac{1}{\frac{1}{6}} = 6 \text{ days}$

Soln 5

A's 1 day work = $\frac{1}{12}$



B's 1 day work = $\frac{1}{16}$

(A+B)'s 1 day work = $\frac{1}{12} + \frac{1}{16} = \frac{4+3}{48} = \frac{7}{48}$

(A+B)'s 3 day work = $3 \times \frac{7}{48} = \frac{7}{16}$

Remaining work = $1 - \frac{7}{16} = \frac{16-7}{16} = \frac{9}{16}$

B will complete work = $\frac{\text{Remaining work}}{\text{B's one day work}} = \frac{\frac{9}{16}}{\frac{1}{16}} = \frac{9}{16} \times \frac{16}{1} = 9$

So, B will complete in 9 days.

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Teacher: D. Gupta

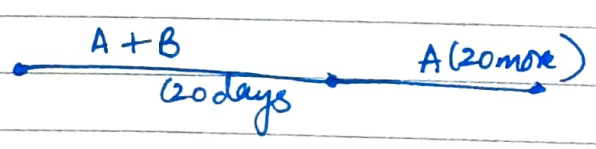
Soln 7: A's 1 day work = $\frac{1}{6}$

B's 1 day work = $\frac{1}{8}$

ratio of money = A's 1 day work : B's one day work
= $\frac{1}{6} : \frac{1}{8}$ L.C.M = 24
= 4 : 3

Share of A = $\frac{4}{4+3} \times ₹160 = ₹ 640$

Share of B = $\frac{3}{4+3} \times ₹160 = ₹ 480$

Soln 11.  (A+B)'s 1 day work = $\frac{1}{30}$

(A+B)'s 20 day work = $20 \times \frac{1}{30} = \frac{2}{3}$

Remaining work = $1 - \frac{2}{3} = \frac{1}{3}$

$\Rightarrow \frac{1}{3}$ of the work, completed in 20 days.

$\Rightarrow$ 1 or complete work in $20 \div \frac{1}{3} = 20 \times 3 = \boxed{60 \text{ days}}$

