General instructions for Students: Whatever be the notes provided, everything must be copied in the Mathematics copy and then do the HOMEWORK in the same copy.

CLASS – VIII **TIME AND WORK** **MATHS**

In solving problems on time and work,

* **One day$'$s work** $= \frac{1}{\text{number of days to complete the work}}$
* **Number of days needed to complete the work** $= \frac{1}{\text{One day}' \text{s work}}$
* **Time required to do a certain work** $= \frac{\text{work to be done}}{\text{One day}' \text{s work}}$
* **Remuneration is in proportion of work done**

EXERCISE – 9.3

2. A can do $\frac{1}{5}$ th of a certain work in 2 days and B can do $\frac{2}{3}$ rd of it in 8 days. In how much time can they together complete the work ?

Solution: **A$'$s one day work** $= \frac{1}{2}$ **of** $\frac{1}{5} = \frac{1}{10}$

B$'$s one day work $= \frac{1}{8}$ **of** $\frac{2}{3} = \frac{1}{12}$

$(A + B)'$ **s one day work** $= \frac{1}{10} + \frac{1}{12} = \frac{11}{60}$

$\therefore$ **A and B working together can complete the work in** $5\frac{5}{11}$ **days.** **Ans.**

5. A can do a piece of work in 40 days. He works at it for 8 days and then B finishes the remaining work in 16 days. How long will they take to complete the work if they do it together?

Solution: **A$'$s one day work** $= \frac{1}{40}$

A$'$s 8 day work $= \frac{1}{40} \times 8 = \frac{1}{5}$ **Remaining work** $= 1 - \frac{1}{5} = \frac{4}{5}$

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

Work to be done by B $= \frac{4}{5} \times \frac{1}{16} = \frac{1}{20}$

$(A + B)'$ **s one day work** $= \frac{1}{40} + \frac{1}{20} = \frac{3}{40}$

$\therefore$ **A and B working together can complete the work in** $13\frac{1}{3}$ **days.** **Ans.**

8. A can do a job in 10 days while B can do it in 15 days. If they work together and earn Rs. 3500, how should they share the money ?

Solution: A'**s one day job** $= \frac{1}{10}$

B'**s one day job** $= \frac{1}{15}$

Ratio of their share of money, $\frac{1}{10} : \frac{1}{15} = 3 : 2$

A'**s share** $= \frac{3}{5} \times 3500 =$ **Rs. 2100**

B'**s share** $= \frac{2}{5} \times 3500 =$ **Rs. 1400** **Ans.**

11. A, B and C working together can plough a field in $4\frac{4}{5}$ **days. A and C together can do it in 8 days. How long would B working alone take to plough the field ?**

Solution: $(A + B + C)'$ **one day work** $= \frac{1}{\frac{24}{5}} = \frac{5}{24}$

$(A + C)'$ **one day work** $= \frac{1}{8}$

Let the no of days B working alone would take to plough the field be x

B'**s one day work** $= \frac{1}{x}$

According to question, $\frac{1}{x} + \frac{1}{8} = \frac{5}{24}$

$\Rightarrow \quad \frac{1}{x} = \frac{5}{24} - \frac{1}{8} = \frac{5-3}{24} = \frac{2}{24} = \frac{1}{12}$

Thus, B working alone would take 12 days to plough the field. **Ans.**

HOMEWORK

EXERCISE – 9.3

QUESTION NUMBERS: 3, 6, 9 and 12

CHECK YOUR PROGRESS: 9, 10 and 12