Time and Work Ex 11.1 Q5

Answer :

Time taken by Sita to do the work $= 9$ hours
Time taken by Mita to do the work $= 6$ hours
Time taken by Rita to do the work $= 12$ hours
Now,
Work done by Sita $= \frac{1}{9}$
Work done by Mita $= \frac{1}{6}$
Work done by Rita $= \frac{1}{12}$
$\therefore$ Work done by them together $= \frac{1}{9} + \frac{1}{6} + \frac{1}{12}$
$= \frac{4+6+3}{36} = \frac{13}{36}$
Thus, together they can do the work in $\frac{36}{13}$ hours.

Time and Work Ex 11.1 Q6

Answer :

Time taken by A to do the work $= 20$ hours
Time taken by B to do the work $= 24$ hours
Time taken by $(A + B + C)$ to do the work $= 8$ hours
Now,
Work done by A $= \frac{1}{20}$
Work done by B $= \frac{1}{24}$
Work done by $(A + B + C) = \frac{1}{8}$
$\therefore$ Work done by C $= \frac{1}{8} - \left(\frac{1}{20} + \frac{1}{24}\right)$
$= \frac{1}{8} - \left(\frac{6}{120} + \frac{5}{120}\right) = \frac{1}{8} - \left(\frac{11}{120}\right)$
$= \frac{15-11}{120} = \frac{4}{120} = \frac{1}{30}$
Thus, C can do the work in 30 hours.

Time and Work Ex 11.1 Q7

Answer :

Time taken by $(A+B)$ to do the work $= 18$ days
Time taken by $(B+C)$ to do the work $= 24$ days
Time taken by $(A+C)$ to do the work $= 36$ days
Now,
Work done by $(A+B) = \frac{1}{18}$
Work done by $(B+C) = \frac{1}{24}$
Work done by $(A+C) = \frac{1}{36}$
$\therefore$ Work done together $= (A+B)+(B+C)+(A+C)$
$= \frac{1}{18}+\frac{1}{24}+\frac{1}{36}$
$= \frac{4+3+2}{72} = \frac{9}{72}$
$= \frac{1}{8}$
$\therefore$ Work done together $= 2(A+B+C) = \frac{1}{8}$
$\therefore$ Work done by $(A+B+C) = \frac{1}{16}$
Thus, together they can finish the work in 16 days.

Time and Work Ex 11.1 Q8

Answer :

Time taken by $(A+B)$ to do the work $= 12$ days
Time taken by $(B+C)$ to do the work $= 15$ days
Time taken by $(A+C)$ to do the work $= 20$ days
Now,
Work done by $(A+B) = \frac{1}{12}$
Work done by $(B+C) = \frac{1}{15}$
Work done by $(A+C) = \frac{1}{20}$
$\therefore$ Work done together $= (A+B)+(B+C)+(A+C)$
$= \frac{1}{12}+\frac{1}{15}+\frac{1}{20}$
$= \frac{5+4+3}{60} = \frac{12}{60}$
$= \frac{1}{5}$
$\therefore$ Work done together $= 2(A+B+C) = \frac{1}{5}$
$\therefore$ Work done by $(A+B+C) = \frac{1}{10}$
$\therefore$ Work done by A alone $= (A+B+C)-(B+C)$
$= \frac{1}{10}-\frac{1}{15} = \frac{3-2}{30} = \frac{1}{30}$
Thus, A alone can do the work in 30 days.

********** END **********