Class VIII, ex 13A, P4

Solutions by Dev Anoop

(7)

Person/s	A	B	C	together
time taken to do work (in h)	20	24	x	8
work done in unit time	$\frac{1}{20}$	$\frac{1}{24}$	$\frac{1}{x}$	$\frac{1}{8}$

acc to con $\frac{1}{20} + \frac{1}{24} + \frac{1}{x} = \frac{1}{8}$

$\Rightarrow \frac{1}{x} = \frac{1}{8} - \frac{1}{20} - \frac{1}{24}$

$= \frac{15 - 6 - 5}{120}$

$= \frac{4}{120}^{1}_{30}$

$\Rightarrow \frac{1}{x} = \frac{1}{30}$

$\Rightarrow x = 30$

(8)

Person/s	A	B	A+B
time to do work (in days)	16	12	$x = \frac{48}{7}$
work done in 1 day	$\frac{1}{16}$	$\frac{1}{12}$	$\frac{1}{x}$

work done in 2 days A $= \frac{2}{16}^{1}_{8}$

work left $= 1 - \frac{1}{8} = \frac{7}{8}$

acc to con

$\frac{1}{x} = \frac{1}{12} + \frac{1}{16}$

$= \frac{4+3}{48}$

$\Rightarrow \frac{1}{x} = \frac{7}{48}$

$x = \frac{48}{7}$

time for $\frac{7}{8}$ (complete work) $= \frac{48}{7}$

$= \frac{48}{7} \times \frac{7}{8} = 6$