

7) A can do $\frac{1}{5}$ of certain work in two days

$$\text{A can do work in 1 day} = \frac{1}{5 \times 2} = \frac{1}{10}$$

B can do $\frac{2}{3}$ of certain work in eight days: $\left(\frac{2}{3}\right) \frac{1}{8} = \frac{2 \times 1}{3 \times 8} = \frac{1}{12}$ of work in one day.

(A+B)'s total work in one day = $\frac{1}{10} + \frac{1}{12}$

$$\frac{6 + 5}{60} = \frac{11}{60}$$

$\therefore \frac{60}{11}$ or $5\frac{5}{11}$ days they can together complete the work.

2) A Tap took to complete tank = 20 minutes

B Tap took to complete the tank = 12 minutes

A tap took to complete work in minutes = $\frac{1}{20}$

B tap took to complete work in minutes = $\frac{1}{12}$

Together they can complete

$$\frac{1}{20} + \frac{1}{12} = \frac{3 + 5}{60} = \frac{8}{60} = \frac{2}{15}$$

They will together complete in one minute = $\frac{15}{2} = 7\frac{1}{2}$

The tank will take $7\frac{1}{2}$ minutes to fill up

3) A does the work in = 6 days
 B A does the work in 1 day = $\frac{1}{6}$ days work

B does the work in = 8 days
 B does the work in 1 day = $\frac{1}{8}$ days work

$$\text{Total work done} = \frac{1}{8} + \frac{1}{6} = \frac{7}{24}$$

$$\text{They together work for 2 days} = 2 \times \frac{7}{24} = \frac{7}{12}$$

$$\begin{aligned} \text{The remaining work for A} &= 1 - \frac{7}{12} \\ &= \frac{12-7}{12} \\ &= \frac{5}{12} \end{aligned}$$

A took day to complete the work = 6

$$\text{A can do } \frac{5}{12} \text{ work in days} = 6 \times \frac{5}{12}$$

$$\frac{5}{2} = 2 \frac{1}{2}$$

In $2 \frac{1}{2}$ days the work will be completed by A.

4) A took 6 days to complete the work = 40

A took 1 days to complete work = $\frac{1}{40}$

If work a work for days = $8 \times \frac{1}{5}$
 $= \frac{8}{5}$ days

$\frac{1}{3}$ work done by A

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

B completes $\frac{2}{3}$ work in = 16 days

$$= \frac{16}{\frac{2}{3}} = 16 \times \frac{3}{2} = 24$$

B does in 1 day = $\frac{1}{24}$

$$\frac{1}{40} + \frac{1}{24} = \frac{3+5}{120} = \frac{8}{120} = \frac{1}{15}$$

$\therefore 15$ days if they work together they will complete the work

5) A can do a work in = 10 days

A can do it in 1 day = $\frac{1}{10}$

B can do a work in = 15 days

B can do a work in 1 day = $\frac{1}{15}$

$$\text{Total work} = \frac{1}{10} + \frac{1}{15} = \frac{3+2}{30} = \frac{5}{30} = \frac{1}{6}$$

$$= \frac{5}{306} = \frac{1}{6}$$

Remaining work in = 5 days

$$\text{Remaining work in day} = 8 \times \frac{1}{102} = \frac{1}{2}$$

$$\begin{aligned} \text{A and B worked together} &= \frac{1}{6} + \frac{1}{2} \\ &= \frac{1+3}{6} = \frac{4}{6} \end{aligned}$$

$$= \frac{3}{2} = 1\frac{1}{2}$$

\therefore $1\frac{1}{2}$ day will be required to complete the work.

\Rightarrow 3 women's work = 5 girls work

$$1 \text{ woman's work} = \frac{5}{3} \text{ girls}$$

$$\begin{aligned} 7 \text{ women and 11 girls work} &= \left(\frac{35}{3}\right) + 11 \text{ girls} \\ \text{work} &= \frac{68}{3} \text{ girls work.} \end{aligned}$$

Since 5 girls can do work in 17 days

$$1 \text{ girl can do work} = 17 \times 5 = 35$$

$$\frac{68}{3} \text{ girls can do } \frac{68}{3} \text{ girls and do the work in } = \frac{(17 \times 5)}{68/3}$$

$$\begin{aligned} \therefore 7 \text{ women and 11} & \frac{(17 \times 5 \times 3)}{68} \\ \text{girls can do} & = 15 = 3\frac{3}{4} \\ \text{complete work in } & 3\frac{3}{4} \text{ days.} \end{aligned}$$