

In 16 days, 45 men can complete a certain job. After working for 6 days, 30 more men joined them. How many more days would they now take to finish the job?

- (1) 4 days
- (2) 12 days
- (3) 6 days
- (4) 8 days

11) A tank has an inlet pipe and an outlet pipe. If the outlet pipe is closed then the inlet pipe fills the empty tank in 8 hours. If the outlet pipe is open then the inlet pipe fills the empty tank in 10 hours. If only the outlet pipe is open then in how many hours the full tank becomes half-full?

- (2) 20 (2) 30 (3) 40 (4) 45

12) Three pipes, A, B and C are connected to a tank. These pipes can fill the tank separately in 10 hrs, 15 hrs and 20 hrs respectively. When all the three pipes were opened simultaneously, it was observed that pipes A and B were supplying water at $\frac{3}{4}$ th of their normal rates for the first hour after which they supplied water at the normal rate. Pipe C supplied water at $\frac{2}{3}$ rd of its normal rate for first 2 hours, after which it supplied at its normal rate. In approximate how much time, would tank be filled? (IIFT)

- (1) 5 Hrs (2) 6 Hrs (3) 7 Hrs (4) None of these

$$19 \leftarrow 1 \rightarrow 19$$

$$2 \rightarrow 12 + 8 + 4$$

$$24$$

$$120$$

$$AB$$

$$\begin{aligned} A &\rightarrow 10 * 12 \\ B &\rightarrow 15 * 8 \\ C &\rightarrow 20 * 6 \end{aligned}$$

$$120$$

$$\begin{array}{l} \cancel{FF}^3 \\ \cancel{26}^1 \end{array}$$

$$1 \rightarrow A \rightarrow 9$$

$$B \rightarrow 6$$

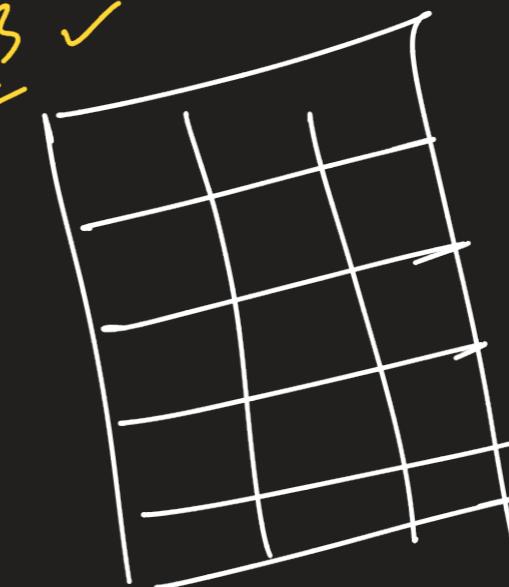
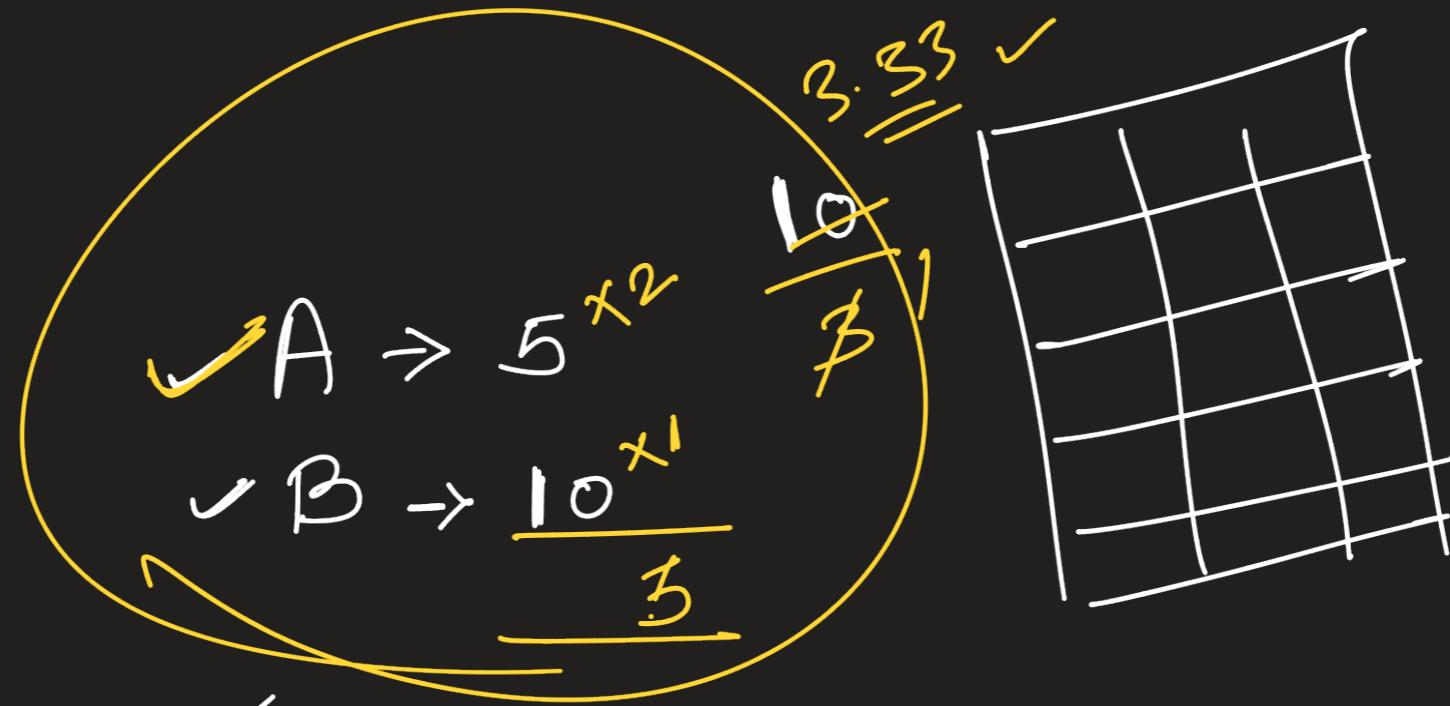
$$C \rightarrow 4$$

$$6 + \frac{2}{3}$$

$$1 \rightarrow$$

$$\begin{array}{r} 2 \\ 8 \times 3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 3 \\ 12 \times 3 \\ \hline 4 \end{array}$$

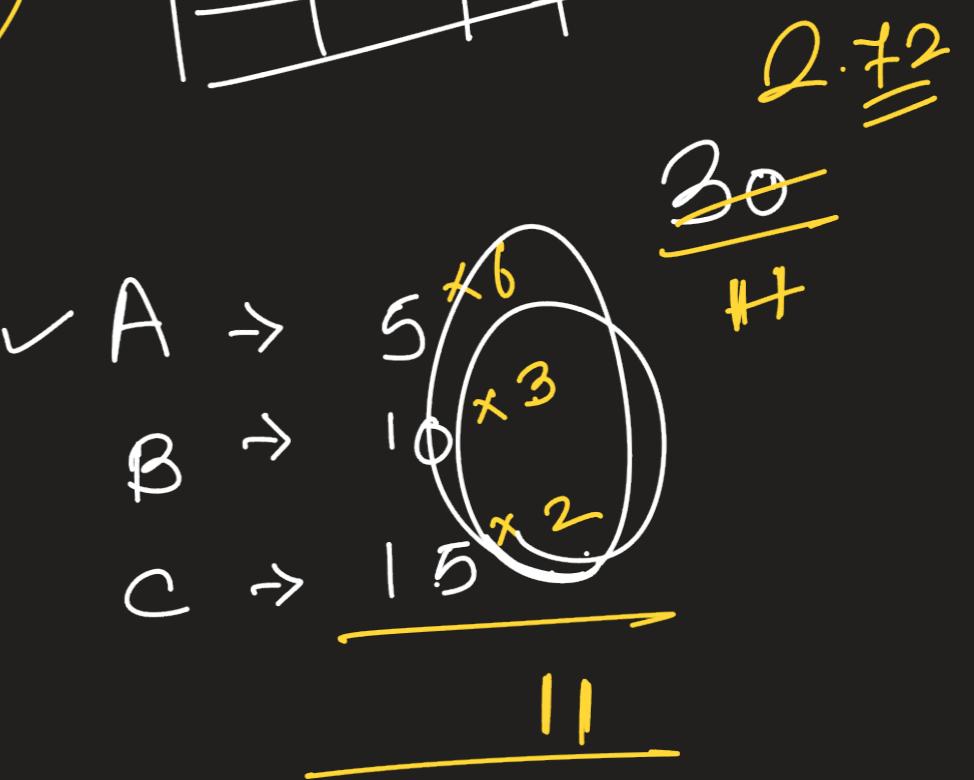


$A + B$

$11 \triangleright A + B + C$

$(5) \triangleright B + C$

$\begin{matrix} \swarrow & \searrow \\ C & \end{matrix}$



All legal days

$$\begin{array}{r} \checkmark A \rightarrow 12 + 5 \\ B \rightarrow 15 + 4 \\ \hline 13.40 \end{array}$$

6.66

$$\begin{array}{l} A \rightarrow 5 \\ B \rightarrow 4 \\ \hline A \rightarrow 5 \\ B \rightarrow 4 \\ \hline A \\ B \\ A \\ B \\ A \\ B \\ A \\ B \end{array}$$

$$2 \xrightarrow{\times 6} 9 \xleftarrow{\times 6}$$

$$\begin{array}{r} 12 \rightarrow 54 \\ \hline 13 \rightarrow 59 \end{array}$$

$$\frac{1}{4}$$

$$13 \frac{1}{4}$$

$$13.25$$

$$13 \frac{2}{5}$$

$$\begin{array}{r} A \rightarrow 5 \\ B \\ A \\ \hline B \end{array}$$

$$2 \xrightarrow{\times 6} 9$$

$$12 \rightarrow 54$$

$$13 \rightarrow 58$$

$$\frac{2}{5}$$

A takes 18 days to finish a job. B takes 27 days to finish the same job. How long would it take for both A and B, working together to finish the same job?

- (1) 11 days
- (2) $12\frac{4}{7}$ days
- (3) $10\frac{4}{5}$ days
- (4) 13 days

A and B together can complete a piece of work in 15 days while A alone can complete the work in 21 days.
How long will B alone take to complete the job?

(1) $52\frac{1}{2}$ days

(2) $52\frac{1}{8}$ days

(3) 51 days

(4) $53\frac{3}{4}$ days

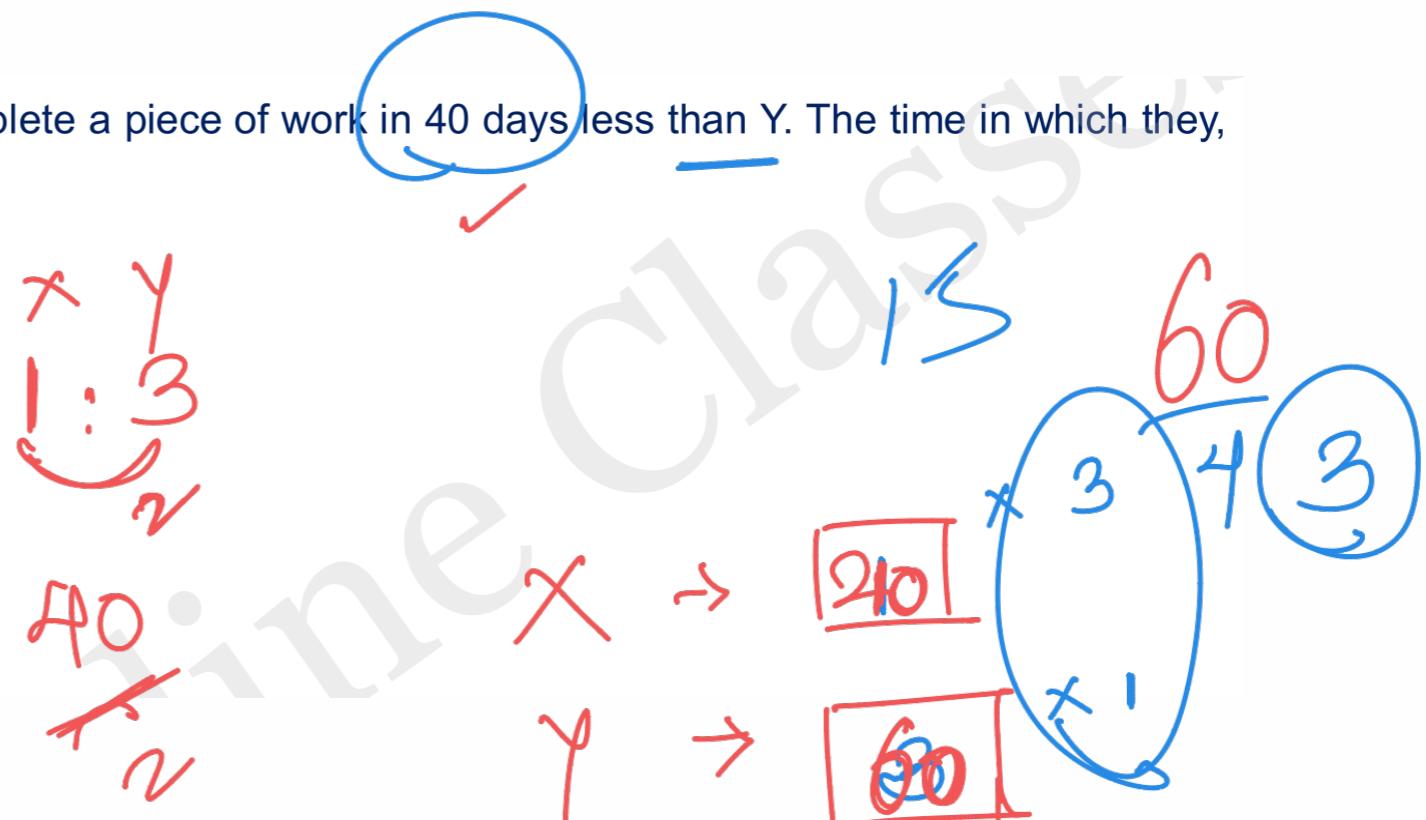
✓ A 21×5
✓ B 52.5×2
—
— 15×7

3 | $\overline{21, 15}$
| 7, 5
| 7 | 1

X is three times as fast as Y and is able to complete a piece of work in 40 days less than Y. The time in which they, working together, can complete the work is

- (1) 15 days
- (2) 10 days
- (3) $7\frac{1}{2}$ days
- (4) 5 days

$$\begin{array}{l} Q:S \\ 3:2 \end{array}$$



$$\begin{array}{l} 3:I \\ I:3 \end{array}$$

A and B can complete a job in 8 days working together. B alone can complete it in 12 days. Both started working together and worked for 4 days and then B left. How long will A take to complete the remaining work?

- (1) $10\frac{3}{4}$ days
- (2) $11\frac{1}{2}$ days
- (3) 16 days
- (4) 12 days

A 24 $\times 1$
B 12 $\times 2$

8 $\times 3$

24 → 12
↓
1

12
=

12

12
=

Tot work $\rightarrow 2$

$$A \rightarrow 5 \quad B \rightarrow 10$$

(2) $\left(\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}\right)$

(7) $\left(\frac{1}{10} + \frac{1}{10} + \dots\right)$

A + B

$$\left(\frac{3}{10}, \frac{10}{3}, 3.33\right)$$

$$\underline{\left(\frac{1}{5} + \frac{1}{10}\right)}$$

$$\left. \begin{array}{l} \cancel{15} \\ 50 \end{array} \right\} \frac{3}{10}$$

A and B working together can do a piece of work in 18 days, B and C in 24 days, C and A in 36 days. How many days will it take if all of them work together?

- (1) 18 days
- (2) 21 days
- (3) 16 days
- (4) 14 days
- (5) 20 days

\rightarrow A alone.

B al.

$$\frac{1.5}{A + B} \rightarrow 18 \times 4$$

$$\frac{2.5}{B + C} \rightarrow 24 \times 3$$

$$\frac{2.5}{A + C} \rightarrow 36 \times 2$$

$$\frac{f2}{4}$$

$$\frac{f2}{1.5}$$

$$\frac{f2}{4.5}$$

$$\frac{f2 \times 10}{45} \approx 1$$

$$\frac{f2}{0.5}$$

$$\begin{aligned} A + B &\rightarrow 4 \\ B + C &\rightarrow 3 \\ A + C &\rightarrow 2 \end{aligned}$$

$$\begin{aligned} A + B + C &\rightarrow 4.5 \\ &\downarrow \\ &0.5 \end{aligned}$$

$$2A + 2B + 2C \rightarrow 9$$

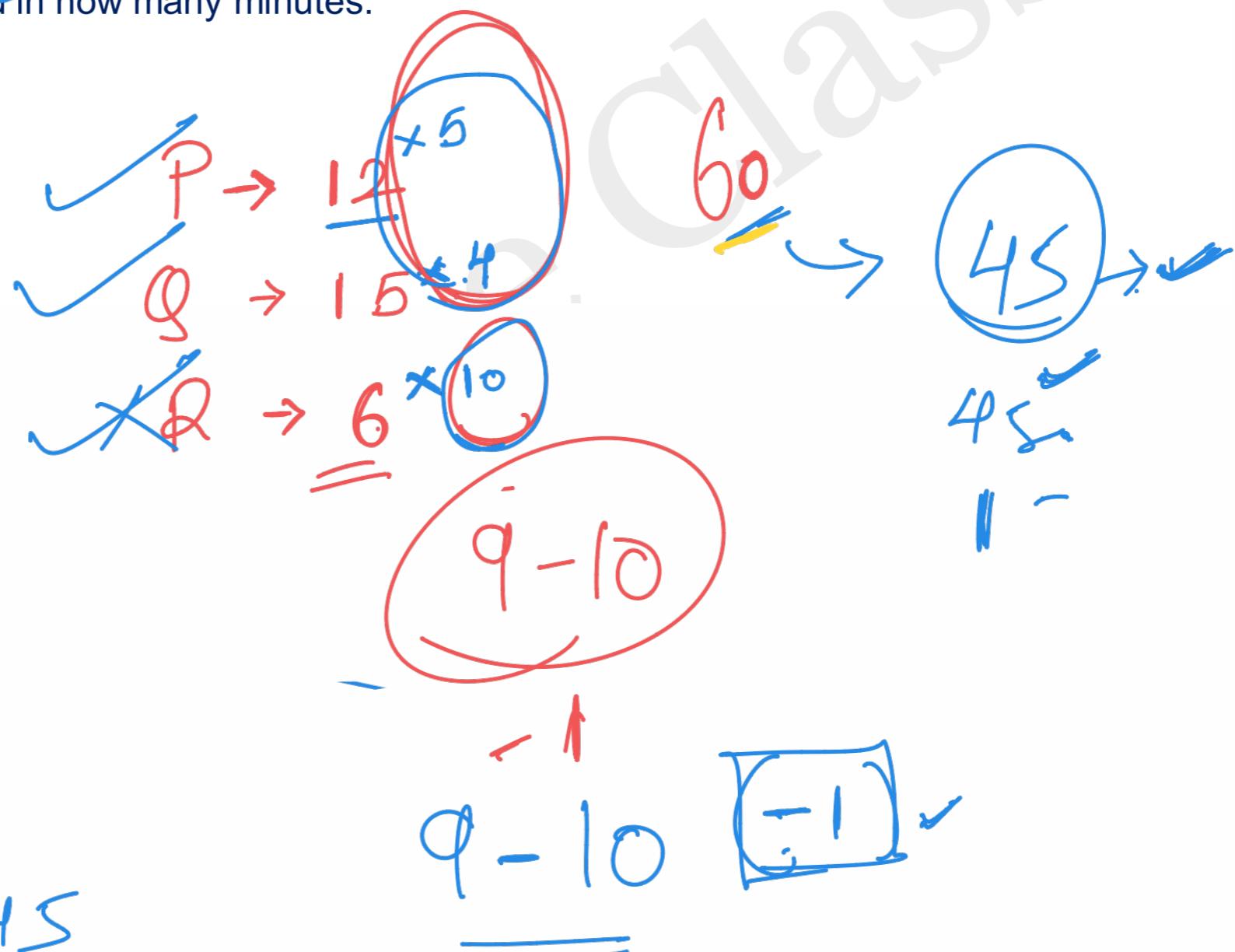
$$\frac{f2}{2.5}$$

Two pipes P and Q can fill a tank in 12 minutes and 15 minutes respectively. A third pipe R can empty the full tank in 6 minutes. P and Q are kept open for 5 minutes initially and then pipe R is also opened. Find out whether the tank will get filled or emptied after that and in how many minutes.

- (1) Filled, 15 minutes
- (2) Emptied, 45 minutes
- (3) Filled, 45 minutes
- (4) Emptied 60 minutes

$$5 \rightarrow P+Q$$

$$\begin{aligned} q^{\times 5} &\rightarrow z^{\times 5} \\ 5 &\rightarrow 45 \end{aligned}$$



$$\begin{array}{l} 1 \ A \rightarrow 5 \\ 2 \ B \rightarrow 4 \end{array} \quad \left. \begin{array}{l} 1 \ A \rightarrow 5 \\ 2 \ B \rightarrow 4 \end{array} \right\}$$

$$\begin{array}{l} 3 \ A \rightarrow 5 \\ 4 \ B \rightarrow 4 \end{array}$$

5 A

6 B

⋮
⋮
⋮
⋮
A

$$\frac{12 \ B}{\rightarrow A \ B}$$

$$2 \xrightarrow{+6} 9$$

$$12 \rightarrow 54$$

$$13 \rightarrow 59$$

$$\overline{\overline{1}} \quad \left. \begin{array}{l} 1 \\ 4 \end{array} \right\}$$

$$A \rightarrow 12 \quad \textcircled{+5}$$

$$B \rightarrow 15 \quad \textcircled{+4}$$

$$60 \quad \swarrow$$

$$\textcircled{13 \frac{1}{4}}$$

Two pipes can separately fill a tank in 20 min and 15 min respectively and a waste pipe can empty the completely filled tank in 12 min. On a certain day, the two inlet pipes are turned on simultaneously to fill the empty tank. But after 9 min it was found that the waste pipe was also left opened, it was closed immediately. How much additional time was required to fill the tank completely?

- (1) 5.5 min
- (2) 5 min
- (3) 6 min
- (4) 6.2 min

$$\begin{array}{l}
 P \rightarrow 20 \\
 Q \rightarrow 15 \\
 (-) \cancel{R} \rightarrow 12
 \end{array}$$

60

$\times 3$

$\times 4$

$\times 5$

$$\begin{array}{r}
 42 \\
 \hline
 6 \\
 \hline
 \cancel{7} /
 \end{array}$$

$$\begin{array}{r}
 9 \times 2 \\
 \hline
 \cancel{18} /
 \end{array}
 \Rightarrow
 \begin{array}{r}
 18 \\
 \hline
 \cancel{18} /
 \end{array}$$

