

6. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be:

4 days

5 days

6 days

7 days

Answer: Option

Explanation:

Let 1 man's 1 day's work = x and 1 boy's 1 day's work = y .

Then, $6x + 8y = \frac{1}{10}$ and $26x + 48y = \frac{1}{2}$.

Solving these two equations, we get : $x = \frac{1}{100}$ and $y = \frac{1}{200}$.

(15 men + 20 boy)'s 1 day's work = $\left(\frac{15}{100} + \frac{20}{200} \right) = \frac{1}{4}$.

\therefore 15 men and 20 boys can do the work in 4 days.

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7. A can do a piece of work in 4 hours; B and C together can do it in 3 hours, while A and C together can do it in 2 hours. How long will B alone take to do it?

8 hours

10 hours

12 hours

24 hours

Answer: Option

Explanation:

A's 1 hour's work = $\frac{1}{4}$;

(B + C)'s 1 hour's work = $\frac{1}{3}$;

(A + C)'s 1 hour's work = $\frac{1}{2}$.

$$(A + B + C)\text{'s 1 hour's work} = \left(\frac{1}{4} + \frac{1}{3} \right) = \frac{7}{12}.$$

$$B\text{'s 1 hour's work} = \left(\frac{7}{12} - \frac{1}{2} \right) = \frac{1}{12}.$$

∴ B alone will take 12 hours to do the work.

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8. A can do a certain work in the same time in which B and C together can do it. If A and B together could do it in 10 days and C alone in 50 days, then B alone could do it in:

15 days

20 days

25 days

30 days

Answer: Option

Explanation:

$$(A + B)\text{'s 1 day's work} = \frac{1}{10}$$

$$C\text{'s 1 day's work} = \frac{1}{50}$$

$$(A + B + C)\text{'s 1 day's work} = \left(\frac{1}{10} + \frac{1}{50} \right) = \frac{6}{50} = \frac{3}{25} \dots (i)$$

$$A\text{'s 1 day's work} = (B + C)\text{'s 1 day's work} \dots (ii)$$

$$\text{From (i) and (ii), we get: } 2 \times (A\text{'s 1 day's work}) = \frac{3}{25}$$

$$\Rightarrow A\text{'s 1 day's work} = \frac{3}{50}.$$

$$\therefore B\text{'s 1 day's work} = \left(\frac{1}{10} - \frac{3}{50} \right) = \frac{2}{50} = \frac{1}{25}.$$

So, B alone could do the work in 25 days.

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9. A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone would take to do the whole work?

23 days

37 days

$37\frac{1}{2}$

40 days

Answer: Option

Explanation:

Whole work is done by A in $\left(20 \times \frac{5}{4}\right) = 25$ days.

Now, $\left(1 - \frac{4}{5}\right)$ i.e., $\frac{1}{5}$ work is done by A and B in 3 days.

Whole work will be done by A and B in $(3 \times 5) = 15$ days.

A's 1 day's work = $\frac{1}{25}$, (A + B)'s 1 day's work = $\frac{1}{15}$.

\therefore B's 1 day's work = $\left(\frac{1}{15} - \frac{1}{25}\right) = \frac{4}{150} = \frac{2}{75}$.

So, B alone would do the work in $\frac{75}{2} = 37\frac{1}{2}$ days.

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10. A machine P can print one lakh books in 8 hours, machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 A.M. while machine P is closed at 11 A.M. and the remaining two machines complete work. Approximately at what time will the work (to print one lakh books) be finished ?

11:30 A.M.

12 noon

12:30 P.M.

1:00 P.M.

Answer: Option

Explanation:

(P + Q + R)'s 1 hour's work = $\left(\frac{1}{8} + \frac{1}{10} + \frac{1}{12}\right) = \frac{37}{120}$.

$$\text{Work done by P, Q and R in 2 hours} = \left(\frac{37}{120} \times 2 \right) = \frac{37}{60}.$$

$$\text{Remaining work} = \left(1 - \frac{37}{60} \right) = \frac{23}{60}.$$

$$(Q + R)\text{'s 1 hour's work} = \left(\frac{1}{10} + \frac{1}{12} \right) = \frac{11}{60}.$$

Now, $\frac{11}{60}$ work is done by Q and R in 1 hour.

$$\text{So, } \frac{23}{60} \text{ work will be done by Q and R in } \left(\frac{60}{11} \times \frac{23}{60} \right) = \frac{23}{11} \text{ hours} \approx 2 \text{ hours.}$$

So, the work will be finished approximately 2 hours after 11 A.M., i.e., around 1 P.M.