41- A and B can do a piece of work in 30 days, while B and C can do the same work in 24 days and C and A in 20 days. They all work together for 10 days when B and C leave. How many days more will A take to finish the work?

- **A.**18 days
- **B.**24 days
- **C.**30 days
- **D.**36 days
- **E.**None of these

Answer & Explanation

Answer - **A** (18 days)

Explanation -

$$2(A + B + C)\text{'s 1 day's work} = \frac{1}{30} + \frac{1}{24} + \frac{1}{20} = \frac{15}{120} = \frac{1}{8}.$$

$$\text{Therefore, } (A + B + C)\text{'s 1 day's work} = \frac{1}{2 \times 8} = \frac{1}{16}.$$

$$\text{Work done by A, B, C in 10 days} = \frac{10}{16} = \frac{5}{8}.$$

$$\text{Remaining work} = 1 - \frac{5}{8} = \frac{3}{8}.$$

$$\text{A's 1 day's work} = \frac{1}{16} - \frac{1}{24} = \frac{1}{48}.$$

Now, $\frac{1}{48}$ work is done by A in 1 day.

So, $\frac{3}{8}$ work will be done by A in $48 \times \frac{3}{8} = 18$ days.

8   8

42- A works twice as fast as B. If B can complete a work in 12 days independently, the number of days in which A and B can together finish the work in :

- **A.**4 days

- **B.**6 days

- **C.**8 days

- **D.**18 days

- **E.**None of these

Answer & Explanation

Answer - **A** (4 days)

Explanation -   Ratio of rates of working of A and B = 2 : 1.

So, ratio of times taken = 1 : 2.

B's 1 day's work = $\dfrac{1}{12}$.

A's 1 day's work = $\dfrac{1}{6}$; (2 times of B's work)

(A + B)'s 1 day's work = $\dfrac{1}{6} + \dfrac{1}{12} = \dfrac{3}{12} = \dfrac{1}{4}$.

So, A and B together can finish the work in 4 days.

43- Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

- **A.**3 : 4
- **B.**4 : 3
- **C.**5 : 3
- **D.**Data inadequate
- **E.**None of these

Answer & Explanation

Answer - **B** (4 : 3)

Explanation -   (20 x 16) women can complete the work in 1 day.

1 woman's 1 day's work $=\dfrac{1}{320}$.

(16 x 15) men can complete the work in 1 day.

1 man's 1 day's work $=\dfrac{1}{240}$

So, required ratio $=\dfrac{1}{240}:\dfrac{1}{320}$

$=\dfrac{1}{3}:\dfrac{1}{4}$

$= 4 : 3$ (cross multiplied)

44- A, B and C can complete a piece of work in 24, 6 and 12 days respectively. Working together, they will complete the same work in:

- **A.**1/24 days
- **B.**3 3/7 days
- **C.**3 days
- **D.**4 days
- **E.**None of these

Answer & Explanation

Answer - **B** (3 3/7 days)

Explanation -

$$(A + B + C)\text{'s 1 day's work} = \frac{1}{24} + \frac{1}{6} + \frac{1}{12} = \frac{7}{24}$$

$$\text{So, A, B and C together will complete the job in } \frac{24}{7} = 3\frac{3}{7} \text{ days.}$$

45- A can finish a work in 24 days, B in 9 days and C in 12 days. B and C start the work but are forced to leave after 3 days. The remaining work was done by A in:

- **A.** 5 days
- **B.** 6 days
- **C.** 10 days
- **D.** 12 days
- **E.** None of these

Answer & Explanation

Answer - **C** (10 days)

Explanation -

(B + C)'s 1 day's work = $\dfrac{1}{9} + \dfrac{1}{12} = \dfrac{7}{36}$

Work done by B and C in 3 days = $\dfrac{7}{36} \times 3 = \dfrac{7}{12}$

Remaining work = $1 - \dfrac{7}{12} = \dfrac{5}{12}$

Now, $\dfrac{1}{24}$ Work is done by A in 1 day.

So, $\dfrac{5}{12}$ work is done by A in $24 \times \dfrac{5}{12} = 10$ days.

46- A can do a piece of work in 10 days; B in 15 days. They work for 5 days. The rest of the work was finished by C in 2 days. If they get Rs. 1500 for the whole work, the daily wages of B and C are:

- **A.**Rs. 150
- **B.**Rs. 225
- **C.**Rs. 250
- **D.**Rs. 300
- **E.**None of these

Answer & Explanation

Answer - **B** (Rs. 225)

Explanation -

Part of the work done by A = $\dfrac{1}{10}$ x 5 = $\dfrac{1}{2}$

Part of the work done by B = $\dfrac{1}{15}$ x 5 = $\dfrac{1}{3}$

Part of the work done by C = 1 - $\dfrac{1}{2}$ + $\dfrac{1}{3}$ = $\dfrac{1}{6}$

So, (A's share) : (B's share) : (C's share) = $\dfrac{1}{2} : \dfrac{1}{3} : \dfrac{1}{6}$ = 3 : 2 : 1

A's share = Rs. $\dfrac{3}{6}$ x 1500 = Rs. 750,   B's share = Rs. $\dfrac{2}{6}$ x 1500 = Rs. 500.

C's share = Rs. $\dfrac{1}{6}$ x 1500 = Rs. 250.

A's daily wages = Rs. $\dfrac{750}{5}$ = Rs. 150,   B's daily wages = Rs. $\dfrac{500}{5}$ = Rs. 100.

C's daily wages = Rs. $\dfrac{250}{2}$ = Rs. 125.

Daily wages of B and C = Rs. (100 + 125) = Rs. 225.

47- A can finish a work in 24 days, B in 9 days and C in 12 days. B and C start the work but are forced to leave after 3 days. The remaining work was done by A in:

- **A.**5 days

- **B.**6 days

- **C.**8 days

- **D.**10 days

- **E.**None of these

Answer & Explanation
Answer - **D** (10 days)
Explanation -

$(B + C)$'s 1 day's work = $\dfrac{1}{9} + \dfrac{1}{12} = \dfrac{7}{36}$.

Work done by B and C in 3 days = $\dfrac{7}{36} \times 3 = \dfrac{7}{12}$.

Remaining work = $1 - \dfrac{7}{12} = \dfrac{5}{12}$.

Now, $\dfrac{1}{24}$ work is done by A in 1 day.

So, $\dfrac{5}{12}$ work is done by A in $24 \times \dfrac{5}{12}$ = 10 days.

48- X can do a piece of work in 40 days. He works at it for 8 days and then Y finished it in 16 days. How long will they together take to complete the work?

- **A.** 13 1/3 days

- **B.** 15 days

- **C.** 20 days

- **D.** 26 days

- **E.** None of these

Answer & Explanation

Answer - **A** (13 1/3 days)

Explanation -

Work done by X in 8 days $= \dfrac{1}{40} \times 8 = \dfrac{1}{5}$.

Remaining work $= 1 - \dfrac{1}{5} = \dfrac{4}{5}$.

Now, $\dfrac{4}{5}$ work is done by Y in 16 days.

Whole work will be done by Y in $16 \times \dfrac{5}{4} = 20$ days.

X's 1 day's work $= \dfrac{1}{40}$, Y's 1 day's work $= \dfrac{1}{20}$.

$(X + Y)$'s 1 day's work $= \dfrac{1}{40} + \dfrac{1}{20} = \dfrac{3}{40}$.

Hence, X and Y will together complete the work in $\dfrac{40}{3} = 13\dfrac{1}{3}$ days.

49- A and B can do a job together in 7 days. A is 1 3/4 times as efficient as B. The same job can be done by A alone in :

- **A.** 9 1/3 days
- **B.** 11 days
- **C.** 12 1/4 days
- **D.** 16 1/3 days
- **E.** None of these

Answer & Explanation

Answer - **B** (11 days)

Explanation -

(A's 1 day's work) : (B's 1 day's work) $= \dfrac{7}{4} : 1 \ = \ 7 : 4.$

Let A's and B's 1 day's work be $7x$ and $4x$ respectively.

Then, $7x + 4x = \dfrac{1}{7}$ $11x = \dfrac{1}{7}$ $x = \dfrac{1}{77}.$

A's 1 day's work $= \dfrac{1}{77}$ x 7 $= \dfrac{1}{11}.$

50- A and B together can do a piece of work in 30 days. A having worked for 16 days, B finishes the remaining work alone in 44 days. In how many days shall B finish the whole work alone?

- **A.**30 days
- **B.**40 days
- **C.**60 days
- **D.**70 days
- **E.**None of these

Answer & Explanation

Answer - **C** (60 days)

Explanation -   Let A's 1 day's work = x and B's 1 day's work = y.

Then, $x + y = \dfrac{1}{30}$ and $16x + 44y = 1$.

Solving these two equations, we get: $x = \dfrac{1}{60}$ and $y = \dfrac{1}{60}$

B's 1 day's work $= \dfrac{1}{60}$.

Hence, B alone shall finish the whole work in 60 days.