11- 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:

- **A.**4 days

- **B.**5 days

- **C.**6 days

- **D.**7 days

- **E.**None of these

Answer & Explanation

Answer - **A** (4 days)

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

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

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

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

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

12- 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:

- **A.**15 days
- **B.**20 days
- **C.**25 days
- **D.**30 days
- **E.**None of these

Answer & Explanation

Answer - **C** (25 days)

Explanation -

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

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

$(A + B + C)$'s 1 day's work $= \dfrac{1}{10} + \dfrac{1}{50} = \dfrac{6}{50} = \dfrac{3}{25}$. .... (i)

A's 1 day's work = $(B + C)$'s 1 day's work .... (ii)

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

A's 1 day's work $= \dfrac{3}{50}$.

B's 1 day's work $\dfrac{1}{10} - \dfrac{3}{50} = \dfrac{2}{50} = \dfrac{1}{25}$.

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

13- 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?

- **A.**23 days

- **B.**37 days

- **C.**37 1/2 days

- **D.**40 days

- **E.**None of these

Answer & Explanation
Answer - **C** (37 1/2 days)
Explanation -

Whole work is done by A in $20 \times \dfrac{5}{4} = 25$ days.

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

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

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

B's 1 day's work = $\dfrac{1}{15} - \dfrac{1}{25} = \dfrac{4}{150} = \dfrac{2}{75}$.

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

14- 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?

- **A.** 11:30 A.M.
- **B.** 12 noon
- **C.** 12:30 P.M.
- **D.** 1:00 P.M.
- **E.** None of these

Answer & Explanation

Answer - **D** (1:00 P.M.)

Explanation -

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

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

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

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

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

So, 23 work will be done by Q and R in   60 x 23 = 23 hours   2 hours.

$$\overline{60} \qquad\qquad \overline{11} \quad \overline{60} \quad \overline{11}$$

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

15- A and B can do a work in 12 days, B and C in 15 days, C and A in 20 days. If A, B and C work together, they will complete the work in:

- **A.**5 days

- **B.**7 days

- **C.**10 days

- **D.**12 days

- **E.**None of these

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

$(A + B)$'s 1 day's work = $\dfrac{1}{12}$; $(B + C)$'s 1 day's work = $\dfrac{1}{15}$; $(A + C)$'s 1 day's work = $\dfrac{1}{20}$

Adding, we get: $2(A + B + C)$'s 1 day's work = $\dfrac{1}{12} + \dfrac{1}{15} + \dfrac{1}{20} = \dfrac{12}{60} = \dfrac{1}{5}$

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

So, A, B and C together can complete the work in 10 days.

16- A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days A alone can finish the remaining work?

- **A.**5 days
- **B.**6 days
- **C.**7 days
- **D.**8 days
- **E.**None of these

Answer & Explanation
Answer - **B** (6 days)
Explanation -

B's 10 day's work = $\dfrac{1}{15}$ x 10 = $\dfrac{2}{3}$. Remaining work = $1 - \dfrac{2}{3} = \dfrac{1}{3}$

Now, $\dfrac{1}{18}$ work is done by A in 1 day.

$\dfrac{1}{3}$ work is done by A in $18 \text{ x } \dfrac{1}{3} = 6$ days.

17- A can finish a work in 18 days and B can do the same work in half the time taken by A. Then, working together, what part of the same work they can finish in a day?

- **A.**1/6

- **B.**1/9

- **C.**2/5

- **D.**2/7

- **E.**None of these

Answer & Explanation

Answer - **A** (1/6)

Explanation -

A's 1 day's work = $\dfrac{1}{18}$ and B's 1 day's work = $\dfrac{1}{9}$

(A + B)'s 1 day's work = $\dfrac{1}{18} + \dfrac{1}{9} = \dfrac{1}{6}$

18- A, B and C can do a piece of work in 11 days, 20 days and 55 days respectively, working alone. How soon can the work be done if A is assisted by B and C on alternate days?

- **A.**7 days

- **B.**8 days

- **C.**9 days

- **D.**10 days

- **E.**None of these

Answer & Explanation

Answer - **B** (8 days)

Explanation -

(A + B)'s 1 day's work = $\dfrac{1}{11} + \dfrac{1}{20} = \dfrac{31}{220}$. (A + C)'s 1 day's work = $\dfrac{1}{11} + \dfrac{1}{55} = \dfrac{6}{55}$

Work done in 2 days = $\dfrac{31}{220} + \dfrac{6}{55} = \dfrac{55}{220} = \dfrac{1}{4}$

Now, $\dfrac{1}{4}$ work is done by A in 2 days.

Whole work will be done in (2 x 4) = 8 days.

19- 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 -

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

$(A + B + C)$'s 1 day's work $= \dfrac{1}{16}$

Work done by A, B and C in 10 days $= \dfrac{10}{16} = \dfrac{5}{8}$ Remaining work $= 1 - \dfrac{5}{8} = \dfrac{3}{8}$

A's 1 day's work $= \dfrac{1}{16} - \dfrac{1}{24} = \dfrac{1}{48}$

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

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

$\overline{8}$ $\overline{8}$

20- A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days, A alone can finish the remaining work?

- **A.** 5 days

- **B.** 6 days

- **C.** 7 days

- **D.** 8 days

- **E.** None of these

Answer & Explanation

Answer - **B** (6 days)

Explanation -

B's 10 day's work = $\dfrac{1}{15}$ x 10 = $\dfrac{2}{3}$.

Remaining work = 1 - $\dfrac{2}{3}$ = $\dfrac{1}{3}$.

Now, $\dfrac{1}{18}$ work is done by A in 1 day.

$\dfrac{1}{3}$ work is done by A in 18 x $\dfrac{1}{3}$ = 6 days.