

21- 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?

- **A.**35 days
- **B.**40 days
- **C.**45 days
- **D.**50 days
- **E.**None of these

Answer & Explanation

Answer - **B** (40 days)

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

$$\text{Then, } 4x + 6y = \frac{1}{8} \text{ and } 3x + 7y = \frac{1}{10}.$$

$$\text{Solving the two equations, we get: } x = \frac{11}{400}, y = \frac{1}{400}$$

$$\text{1 woman's 1 day's work} = \frac{1}{400}.$$

$$\text{10 women's 1 day's work} = \frac{1}{400} \times 10 = \frac{1}{40}.$$

Hence, 10 women will complete the work in 40 days.

22- A and B can together finish a work 30 days. They worked together for 20 days and then B left. After another 20 days, A finished the remaining work. In how many days A alone can finish the work?

- **A.**40 days
- **B.**50 days
- **C.**54 days
- **D.**60 days
- **E.**None of these

Answer & Explanation

Answer - **D** (60 days)

Explanation -

$$(A + B)\text{'s 20 day's work} = \frac{1}{30} \times 20 = \frac{2}{3}.$$

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

Now, $\frac{1}{3}$ work is done by A in 20 days.

Therefore, the whole work will be done by A in $(20 \times 3) = 60$ days.

23- P can complete a work in 12 days working 8 hours a day. Q can complete the same work in 8 days working 10 hours a day. If both P and Q work together, working 8 hours a day, in how many days can they complete the work?

- **A.** 5 5/11 days
- **B.** 5 6/11 days
- **C.** 6 5/11 days
- **D.** 6 6/11 days
- **E.** None of these

Answer & Explanation

Answer - **A** (5 5/11)

Explanation - P can complete the work in (12×8) hrs. = 96 hrs.

Q can complete the work in (8×10) hrs. = 80 hrs.

$$\text{P's 1 hour's work} = \frac{1}{96} \text{ and Q's 1 hour's work} = \frac{1}{80}$$

$$(\text{P} + \text{Q})\text{'s 1 hour's work} = \frac{1}{96} + \frac{1}{80} = \frac{11}{480}$$

So, both P and Q will finish the work in $\frac{480}{11}$ hrs.

$$\text{Number of days of 8 hours each} = \frac{480}{11} \times \frac{1}{8} = \frac{60}{11} \text{ days} = 5 \frac{5}{11} \text{ days.}$$

24- 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?

- **A.** 3 days
- **B.** 5 days
- **C.** 7 days
- **D.** Cannot be determined
- **E.** None of these

Answer & Explanation**Answer** - C (7 days)**Explanation** -

$$1 \text{ woman's 1 day's work} = \frac{1}{70}$$

$$1 \text{ child's 1 day's work} = \frac{1}{140}$$

$$(5 \text{ women} + 10 \text{ children})'s \text{ day's work} = \frac{5}{70} + \frac{10}{140} = \frac{1}{14} + \frac{1}{14} = \frac{1}{7}$$

5 women and 10 children will complete the work in 7 days.

25- A sum of money is sufficient to pay A's wages for 21 days and B's wages for 28 days. The same money is sufficient to pay the wages of both for:

- **A.** 12 days
- **B.** 13 days
- **C.** 14 days
- **D.** 15 days
- **E.** None of these

Answer & Explanation**Answer** - A (12 days)**Explanation** -

Let total money be Rs. x .

$$A's \text{ 1 day's wages} = \text{Rs. } \frac{x}{21}, \text{ B's 1 day's wages} = \text{Rs. } \frac{x}{28}$$

$$(A + B)'s \text{ 1 day's wages} = \text{Rs. } \frac{x}{21} + \frac{x}{28} = \text{Rs. } \frac{x}{12}$$

Money is sufficient to pay the wages of both for 12 days.

26- A, B and C can complete a work separately in 24, 36 and 48 days respectively. They started together but C left after 4 days of start and A left 3 days before the completion of the work. In how many days will the work be completed?

- **A.**15 days
- **B.**22 days
- **C.**25 days
- **D.**35 days
- **E.**None of these

Answer & Explanation

Answer - **A** (15 days)

Explanation -

$$(A + B + c)\text{'s 1 day's work} = \frac{1}{24} + \frac{1}{36} + \frac{1}{48} = \frac{13}{144}$$

$$\text{Work done by (A + B +C) in 4 days} = \frac{13}{144} \times 4 = \frac{13}{36}$$

$$\text{Work done by B in 3 days} = \frac{1}{36} \times 3 = \frac{1}{12}. \text{ Remaining work} = 1 - \frac{13}{36} - \frac{1}{12} = \frac{5}{9}$$

$$(A + B)\text{'s 1 day's work} = \frac{1}{24} + \frac{1}{36} = \frac{5}{72}$$

$$\text{Now, } \frac{5}{72} \text{ work was done by A and B in } \frac{72}{5} \times \frac{5}{9} = 8 \text{ days.}$$

Hence, total time taken = (4 + 3 + 8) days = 15 days.

27- A man can do a piece of work in 5 days, but with the help of his son, he can do it in 3 days. In what time can the son do it alone?

- **A.** 7 days
- **B.** 7 1/2 days
- **C.** 8 days
- **D.** 8 1/2 days
- **E.** None of these

Answer & Explanation

Answer - **B** (7 1/2 days)

Explanation -

$$\text{Son's 1 day's work} = \frac{1}{3} - \frac{1}{5} = \frac{2}{15}$$

$$\text{The son alone can do the work in } \frac{15}{2} = 7 \frac{1}{2} = \text{days.}$$

28- A does half as much work as B in three-fourth of the time. If together they take 18 days to complete the work, how much time shall B take to do it?

- **A.**30 days
- **B.**35 days
- **C.**40 days
- **D.**45 days
- **E.**None of these

Answer & Explanation

Answer - **A** (30 days)

Explanation -

Suppose B takes x days to do the work.

$$\text{A takes } 2 \times \frac{3}{4}x = \frac{3x}{2} \text{ days to do it.}$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{18}$$

$$\frac{1}{x} = \frac{2}{3x} = \frac{1}{18} \text{ or } x = 30.$$

29- X and Y can do a piece of work in 20 days and 12 days respectively. X started the work alone and then after 4 days Y joined him till the completion of the work. How long did the work last?

- **A.**6 days
- **B.**10 days
- **C.**15 days
- **D.**20 days
- **E.**None of these

Answer & Explanation

Answer - **B** (10 days)

Explanation -

$$\text{Work done by X in 4 days} = \frac{1}{20} \times 4 = \frac{1}{5}$$

$$\text{Remaining work} = 1 - \frac{1}{5} = \frac{4}{5}$$

$$(\text{X} + \text{Y})\text{'s 1 day's work} = \frac{1}{20} + \frac{1}{12} = \frac{8}{60} = \frac{2}{15}$$

$$\text{Now, } \frac{2}{15} \text{ work is done by X and Y in 1 day.}$$

$$\text{So, } \frac{4}{5} \text{ work will be done by X and Y in } \frac{15}{2} \times \frac{4}{5} = 6 \text{ days.}$$

Hence, total time taken = (6 + 4) days = 10 days.

30- A is 30% more efficient than B. How much time will they, working together, take to complete a job which A alone could have done in 23 days?

- **A.** 11 days
- **B.** 13 days
- **C.** 15 days
- **D.** 20 days
- **E.** None of these

Answer & Explanation

Answer - **B** (13 days)

Explanation -

Ratio of times taken by A and B = $100 : 130 = 10 : 13$.

Suppose B takes x days to do the work.

$$\text{Then, } 10 : 13 :: 23 : x \quad x = \frac{23 \times 13}{10} \quad x = \frac{299}{10}.$$

$$\text{A's 1 day's work} = \frac{1}{23};$$

$$\text{B's 1 day's work} = \frac{10}{299}.$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{23} + \frac{10}{299} = \frac{23}{299} = \frac{1}{13}.$$

Therefore, A and B together can complete the work in 13 days.

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