

31- Ravi and Kumar are working on an assignment. Ravi takes 6 hours to type 32 pages on a computer, while Kumar takes 5 hours to type 40 pages. How much time will they take, working together on two different computers to type an assignment of 110 pages?

- **A.** 7 hours 30 minutes
- **B.** 8 hours
- **C.** 8 hours 15 minutes
- **D.** 8 hours 25 minutes
- **E.** None of these

Answer & Explanation

Answer - **C** (8 hours 15 minutes)

Explanation -

$$\text{Number of pages typed by Ravi in 1 hour} = \frac{32}{6} = \frac{16}{3}.$$

$$\text{Number of pages typed by Kumar in 1 hour} = \frac{40}{5} = 8.$$

$$\text{Number of pages typed by both in 1 hour} = \frac{16}{3} + 8 = \frac{40}{3}.$$

$$\text{Time taken by both to type 110 pages} = 110 \times \frac{3}{40} \text{ hours}$$

$$= 8\frac{1}{4} \text{ hours (or) 8 hours 15 minutes.}$$

32- 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. 7/24 days
- C. 3 3/7 days
- D. 4 4/7 days
- E. None of these

Answer & Explanation

Answer - C (3 3/7 days)

Explanation -

Formula: If A can do a piece of work in n days, then A's 1 day's work = $\frac{1}{n}$.

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

Formula: If A's 1 day's work = $\frac{1}{n}$, then A can finish the work in n days.

So, all the three together will complete the job in $\frac{24}{7}$ days = $3\frac{3}{7}$ days.

33- Sakshi can do a piece of work in 20 days. Tanya is 25% more efficient than Sakshi. The number of days taken by Tanya to do the same piece of work is:

- **A.** 15 days
- **B.** 16 days
- **C.** 18 days
- **D.** 25 days
- **E.** None of these

Answer & Explanation

Answer - **B** (16 days)

Explanation - Ratio of times taken by Sakshi and Tanya = $125 : 100 = 5 : 4$.

Suppose Tanya takes x days to do the work.

$$5 : 4 :: 20 : x \quad x = \frac{4 \times 20}{5}$$

$x = 16$ days.

Hence, Tanya takes 16 days to complete the work.

34- A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?

- **A.**Rs. 375
- **B.**Rs. 400
- **C.**Rs. 600
- **D.**Rs. 800
- **E.**None of these

Answer & Explanation

Answer - **B** (Rs. 400)

Explanation -

$$\text{C's 1 day's work} = \frac{1}{3} - \left(\frac{1}{6} + \frac{1}{8} \right) = \frac{1}{3} - \frac{7}{24} = \frac{1}{24}$$

$$\text{A's wages : B's wages : C's wages} = \frac{1}{6} : \frac{1}{8} : \frac{1}{24} = 4 : 3 : 1.$$

$$\text{C's share} = \text{Rs. } \frac{1}{8} \times 3200 = \text{Rs. 400}$$

35- P, Q and R are three typists who working simultaneously can type 216 pages in 4 hours. In one hour, R can type as many pages more than Q as Q can type more than P. During a period of five hours, R can type as many pages as P can during seven hours. How many pages does each of them type per hour?

- **A.**14, 17, 20
- **B.**15, 18, 21
- **C.**15, 17, 22
- **D.**16, 18, 22
- **E.**None of these

Answer & Explanation

Answer - B (15, 18, 21)

Explanation -

Let the number of pages typed in one hour by P, Q and R be x , y and z respectively.

Then,

$$x + y + z = \frac{216}{4} \quad x + y + z = 54 \quad \dots(i)$$

$$z - y = y - x \quad 2y = x + z \quad \dots(ii)$$

$$5z = 7x \quad x = \frac{5}{7}z \quad \dots(iii)$$

Solving (i), (ii) and (iii), we get $x = 15$, $y = 18$, $z = 21$.

36- A, B and C together can complete a piece of work in 10 days. All the three started working at it together and after 4 days A left. Then B and C together completed the work in 10 more days. A alone could complete the work in:

- **A.**15 days
- **B.**16 days
- **C.**25 days
- **D.**50 days
- **E.**None of these

Answer & Explanation

Answer - **C** (25 days)

Explanation -

$$\text{Work done by A, B and C in 4 days} = \frac{1}{10} \times 4 = \frac{2}{5}. \text{ Remaining work} = 1 - \frac{2}{5} = \frac{3}{5}$$

$$\text{Now, } \frac{3}{5} \text{ work is done by B and C in 10 days.}$$

$$\text{Whole work will be done by B and C in } 10 \times \frac{5}{3} = \frac{50}{3} \text{ days.}$$

$$(A + B + C)'s \text{ 1 day's work} = \frac{1}{10}, (B + C)'s \text{ 1 day's work} = \frac{3}{50}$$

$$A's \text{ 1 day's work} = \frac{1}{10} - \frac{3}{50} = \frac{2}{50} = \frac{1}{25}$$

A alone could complete the work in 25 days.

37- A alone can complete a work in 16 days and B alone in 12 days. Starting with A, they work on alternate days. The total work will be completed in:

- **A.** 12 days
- **B.** 13 days
- **C.** 13 $\frac{3}{4}$ days
- **D.** 13 $\frac{5}{7}$ days
- **E.** None of these

Answer & Explanation

Answer - **C** (13 $\frac{3}{4}$ days)

Explanation -

$$(A + B)\text{'s 2 days' work} = \frac{1}{16} + \frac{1}{12} = \frac{7}{48}$$

$$\text{work done in 6 pairs of days} = \frac{7}{48} \times 6 = \frac{7}{8}. \text{ Remaining work} = 1 - \frac{7}{8} = \frac{1}{8}$$

$$\text{Work done by A on 13th day} = \frac{1}{16} \text{ Remaining work} = \frac{1}{8} - \frac{1}{16} = \frac{1}{16}$$

On 14th day, it is B's turn.

$$\frac{1}{12} \text{ Work is done by B in 1 day. } \frac{1}{16} \text{ work is done by B in } 12 \times \frac{1}{16} = \frac{3}{4} \text{ day}$$

$$\text{Total time taken} = 13 \frac{3}{4} \text{ days.}$$

38- 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 is:

- **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.

$$\text{A's 1 day's work} = \frac{1}{6} ; \text{B's 1 day's work} = \frac{1}{12}$$

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

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

39- A takes twice as much time as B or thrice as much time as C to finish a piece of work. Working together, they can finish the work in 2 days. B can do the work alone in:

- **A.** 4 days
- **B.** 6 days
- **C.** 8 days
- **D.** 12 days
- **E.** None of these

Answer & Explanation

Answer - **B** (6 days)

Explanation -

Suppose A, B and C take x , $\frac{x}{2}$ and $\frac{x}{3}$ days respectively to finish the work.

$$\text{Then, } \frac{1}{x} + \frac{2}{x} + \frac{3}{x} = \frac{1}{2}$$

$$\frac{6}{x} = \frac{1}{2}$$

$$x = 12.$$

So, B takes $(12/2) = 6$ days to finish the work.

40- A and B can complete a work in 15 days and 10 days respectively. They started doing the work together but after 2 days B had to leave and A alone completed the remaining work. The whole work was completed in:

- **A.** 8 days
- **B.** 10 days
- **C.** 12 days
- **D.** 15 days
- **E.** None of these

Answer & Explanation

Answer - **C** (12 days)

Explanation -

$$(A + B)\text{'s 1 day's work} = \frac{1}{15} + \frac{1}{10} = \frac{1}{6}$$

$$\text{Work done by A and B in 2 days} = \frac{1}{6} \times 2 = \frac{1}{3}$$

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

$$\text{Now, } \frac{1}{15} \text{ work is done by A in 1 day.}$$

$$\frac{2}{3} \text{ work will be done by a in } 15 \times \frac{2}{3} = 10 \text{ days.}$$

Hence, the total time taken = (10 + 2) = 12 days.

Techofworld.In