BHARAT SCHOOL OF BANKING
TIME AND WORK

Question 1

Vidhya can complete a piece of work in 30 days and Nithya in 40 days. Find the remaining work left to complete, if they work together for 8 days.

a) 2/5   b) 1/12   c) 8/15   d) 4/19

Answer : c) 8/15

Solution :

Vidhya's 1 day work = 1/30

Nithya's 1 day work = 1/40

Then, (Vidhya + Nithya)'s 1 day work = 1/30 + 1/40 = 7/120

And (Vidhya + Nithya)'s 8 day's work = 8 x(7/120) = 7/15

Therefore, Remaining work = (1 - 7/15) = 8/15

Question 2

P and Q separately can dig a well in 32 days and 24 days respectively. They completed the same work in 8 days with the help of R. Then R can dig a well alone in:

a) 18 2/5 days b) 19 1/5 days c) 12 3/5 days d) 17 4/5 days

Answer : b)19 1/5 days

Solution :

(P + Q + R)'s 1 day work = 1/8,

P's 1 day work = 1/32,

Q's 1 day work = 1/24.

Therefore R's 1 day work = 1/8 - (1/32 + 1/24) = (1/8 - 7/96)= 5/96

So, R alone can do the work in 96/5 days = 19 1/5 days.

Hence the required answer is 19 1/5 days.

Question 3

A man A can do a piece of work in 8 days, man B can do the same piece of work in 10 days while man C can do it in 12 days. They started work together but after 2 days A left the work and the remaining work has been completed by B and C. Find when will the work be completed (Approximately).

a) 4 days   b) 2 days   c) 3 days d) 5 days.

Answer : a) 4 days.

Solution :

(A + B + C)'s 1 day work = (1/8 + 1/10 + 1/12) = (15 + 12 + 10)/120 = 37/120

Work done by A, B and C in 2 days = (37/120) x 2 = 37/60

Remaining work = 1- 37/60 = 23/60

(B + C)'s 1 day work = (1/10 + 1/12) = 11/60

Now, 11/60 work is done by B and C in 1 day.

So, 23/60 work will be done by B and C in (60/11 x 23/60) = 23/11 days = 2 days(approximately)

So, the work will be finished approximately 2 days after A had left.i.e., around 4 days.

Hence the answer is 4 days.

Question 4

Chandru can complete a work in 36 days and Pavithra can complete the same work in 30 days. If Pavithra worked for 20 days and left the work, in how many days, Chandru alone can complete the remaining job?

a) 12 days b) 11 days c) 18 days d) 10 days

Answer : a) 12 days.

Solution :

Pavithra's 1 day work = 1/30

Pavithra's 20 day's work = 1/30 x 20 = 2/3

Remaining work = 1 - 2/3 = 1/3

Now, Chandru's 1 day work = 1/36

Therefore, 1/3 work is done by him in 36 x 1/3 = 12 days.

Question 5

Prakash can complete a piece of work in 24 days and Praveen can complete the same piece of work in 36 days. If Prakash and Praveen work together, how long would they take to complete the work?

a) 14.4 days   b) 15.5 days   c) 12 days   d) 20 days

Answer : a) 14.4 days

Solution :

Prakash can complete in one day = 1/24 of work.

Praveen can complete in one day = 1/36 of work.

Prakash and Praveen can complete in one day = 1/24 + 1/36 of work.

= 3 + 2 / 72

= 5/72

Both can complete the work in 72/5 days.i.e., 14.4 days

Usually we will solve these type of problems in the above method.There is another alternate method to solve these type of problems.

i.e., we can solve by using LCM method instead of fraction method.

Alternate Method :

L.C.M of 24 and 36 is 72.

For eg, let us assume that they are preparing documents.

72 is the total document, they have to complete.

Prakash alone can complete 72 documents in 24 days, then in one day he will complete 3 documents.

Praveen alone can complete 72 documents in 36 days, then in one day he will complete 2 documents.

By working together they can complete 5 (3 + 2)documents in one day.

We have solved many such problems by starting with the statement, that if a man does a job in 8 days, he will do 1/8 th of the job in 1 day.

The L.C.M. method would ensure that you do not handle fractions till the very end.

For this problem, take the L.C.M of 24 and 36 which is 72.

Therefore, they can complete 72 documents in 14.4 (72/5) days.

Question 6

Bala and Aruna can complete a work in 30 days. Bala can do it alone in 50 days. How many days would Aruna take to complete the work alone?

a) 100 days b) 120 days c) 90 days d) 75 days

Answer : d) 75 days

Solution :

By using the alternate method as mentioned in Question 1, we are going to solve further problems.

LCM of 30 and 50 is 150.

Bala and Aruna can complete whole work in 30 days. In 1 day they can complete 5(150/30) of the work.

Bala alone can can complete whole work in 50 days. In 1 day he can complete 3(150/30) of the work.

Aruna alone can complete in 1 day (5 - 3)of the work.

Therefore, Aruna will complete the whole work in 150/2 = 75 days.

Question 7

P can wash some number of clothes in 6 hours and Q can wash same in 18 hours. After 4 hours, P leaves from his job. Then how long must Q work to

wash the remaining clothes?

a) 6 hours b) 12 hours c) 8 hours d) 4 hours

Answer : a) 6 hours

Solution :

The L.C.M of 6, 18, and 4 is 36. so assume that the total number of clothes is 36.

36 clothes can be washed by P in 6 hours.Hence P's speed is 6 =(36/6) clothes per hour.

Before P's absent, he would have washed 6x4 i.e. 24 clothes.

The remaining is 12 clothes, which will be done by Q in 6 = (18/36 x 12) hours. (as it is indicated that the entire job can be finished by Q in 18 hours)

Hence the answer is 6 hours

Question 8

Vanitha can type a file in 10 hours. Her friend joins after 3 hours.Together they type for 4 hours to complete the file. How many hours would her friend take to type the file alone?

a) 13 1/3 hours b) 12 1/5 hours c) 11 1/2 hours d) 10 1/7 hours

Answer : a) 13 1/3 hours.

Solution :

In some cases, instead of L.C.M you can take multiples of L.C.M or simply multiply the number involved in the problem.

In this problem, the numbers involved are 10, 3 and 4.

Multiplying all of them, we get 120 which is the number of files to be typed.

Vanitha can type 120 files in 10 hours, so in 1 hour 12 files.

She works alone for 3 hours to produce 3x12 files before a helper joins.

Together they finish the balance requirement of 120-36 = 84 in 4 hours, so in 1 hour 21(84/4) files are completed.

But out of this 21, Vanitha is producing 12 files per hour.

Therefore, her friend must be producing 9 files per hour.

If her friend alone types 120 files, then she will complete in 120/9 hours i.e.,13 1/3 hours.

Question 9

A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in:

A. $9\dfrac{1}{5}$ days

B. $9\dfrac{2}{5}$ days

C. $9\dfrac{3}{5}$ days

D. 10

Answer: Option **C**
Explanation:

(A + B + C)'s 1 day's work = $\dfrac{1}{4}$,

A's 1 day's work = $\dfrac{1}{16}$,

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

$\therefore$ C's 1 day's work = $\dfrac{1}{4} - \left(\dfrac{1}{16} + \dfrac{1}{12} \right) = \left(\dfrac{1}{4} - \dfrac{7}{48} \right) = \dfrac{5}{48}$.

So, C alone can do the work in $\dfrac{48}{5} = 9 \dfrac{3}{5}$ days.

Question 10

A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

A. 12 days

B. 15 days

C. 16 days

D. 18 days

Answer: Option **B**
Explanation:

A's 2 day's work = $\left(\dfrac{1}{20} \times 2 \right) = \dfrac{1}{10}$.

(A + B + C)'s 1 day's work = $\left(\dfrac{1}{20} + \dfrac{1}{30} + \dfrac{1}{60} \right) = \dfrac{6}{60} = \dfrac{1}{10}$.

Work done in 3 days = $\left(\dfrac{1}{10} + \dfrac{1}{10} \right) = \dfrac{1}{5}$.

Now, $\dfrac{1}{5}$ work is done in 3 days.

∴ Whole work will be done in (3 x 5) = 15 days.