10.Time and Work

Time and work aptitude questions are asked in every competitive exam.This section will provide shortcuts, tips and tricks to solve quantitative aptitude questions on time and work. These are similar to time and distance shortcuts or ratio and proportion shortcuts. So, all you have to do is be thorough with the basics and practice as many questions as you can.

To make the chapter easy for you all, we are providing you all some **Important Short Tricks to Time & Work Questions** which will surely make the chapter easy for you all.

Mantra to Crack Time and Work Questions

1. Work from Days:

If A can do a piece of work in n days, then A's n days work is=1/n

No. of days = total work / work done in 1 day

Days from Work: If A's 1 day's work =1/n then A can finish the work in n days.

2. Relationship between Men and Work.

More men ——- can do ——-> More work

Less men ——- can do ——-> Less work

3. Relationship between Work and Time

More work ——— takes——> More Time

Less work ——— takes——> Less Time

4. Relationship between Men and Time

More men ——- can do in ——-> Less Time

Less men ——- can do in ——-> More Time

5. If M1 persons can do W1 work in D1 days and M2 persons can do W2 work in D2 days, then

$$\frac{M1D1}{W1} = \frac{M2D2}{W2}$$

6. If M1 persons can do W1 work in D1 days for h1 hours and M2 persons can do W2 work in D2 days for h2 hours, then

$$\frac{M1D1h1}{W1} = \frac{M2D2h2}{W2}$$

7. If A can do a work in 'x' days and B can do the same work in 'y' days, then the number of days required to complete the work if A and B work together is

$$\frac{x * y}{x + y}$$

8. If A can do a work in 'x' days and A + B can do the same work in 'y' days, then the number of days required to complete the work if B works alone is

$$\frac{x * y}{x - y}$$

Time and Work is yet another easy topic and almost all the questions are predictable. Please go through the following solved examples and I am sure that 90% questions would be similar to these examples. Most probably I will complete Time and Work in 3 parts.

Note: In the complete Time and Work series, Efficiency would mean "Work Done in 1 day", and efficiency has been denoted by small letters, e.g. "a" means "Efficiency of A".

Q. 1) If x can finish a job in 4 hours and y can finish the same job in 8 hours independently, then they together will finish the job in

(A) 160 minutes (B) 150 minutes
(C) 140 minutes (D) 120 minutes

Let the total work be 8 units (because 8 is the LCM of 4 and 8)
Efficiency of x (Work done by x in 1 hour) = 8/4 = 2 units
Efficiency of y (Work done by y in 1 hour) = 8/8 = 1 unit
Work done by (x + y) in 1 hour = 3 units
3 units work in completed in 1 hour. Hence 8 units work will be completed in 8/3 hours or 160 minutes.
Answer: (A)

Raj and Ram working together do a piece of work in 10 days. Raj alone can do it in 12 days. Ram alone will do the work in
(A) 20 days (B) 40 days
(C) 50 days (D) 60 days

Q. 2)

Let total work be 60 units (LCM of 10 and 12)
Raj completes the work in 12 days. Hence efficiency or per day work of Raj = 60/12 = 5 units
Raj and Ram take 10 days to complete the work, hence their efficiency = 60/10 = 6 units
Now Efficiency of Ram = (Efficiency of Raj and Ram) – (Efficiency of Raj) = 6 – 5 = 1 unit
That means Raj completes 1 unit of work per day. So to perform 60 units of work, he will take 60 days.
Answer: (D)

A and B do a piece of work in 15 days. B and C can do a similar work in 12 days and C and A in 10 days. How many days will A take to do the work by himself ?
(A) 40 (B) 8 (C) 13 (D) 24

Q. 3)

Let total work = 120 units
Efficiency of A + B = 120/15 = 8 units
Efficiency of B + C = 120/12 = 10 units
Efficiency of C + A = 120/10 = 12 units
Adding all the above 3 equations –
2 * (A + B + C) = 30
Efficiency of (A + B + C) = 15 units
Efficiency of B + C = 120/12 = 10 units
Hence Efficiency of A = Efficiency of (A + B + C) - Efficiency of (B + C) = 15 – 10 = 5 units
Hence time taken by A to do 120 units of work = 120/5 = 24 days
Answer: (D)

Q. 4) A tank has two pipes. The first pipe can fill it in 4 hours and the second can empty it in 16 hours. If two pipes be opened together at a time, then the tank will be filled in

(A) 10 hours (B) $5\frac{1}{3}$ hours

(C) $5\frac{1}{2}$ hours (D) 6 hours

Let the total work be 16 units.
Efficiency of first pipe = 16/4 = +4 units
Efficiency of second pipe = 16/16 = -1 units [negative sign because this pipe is emptying the tank]
When both the pipes are opened together, their efficiency = (+4) + (-1) = +3 units [The positive sign indicates that when both the pipes are opened together, their net result will fill the tank]
3 units of work is done in 1 hour
16 units of work is done in 16/3 hours
Answer: (B)
Note : In questions where one pipe is emptying the cistern while another is filling it, you must put a positive or negative sign before the efficiency. But in questions where both the pipes are emptying the cistern or both the pipes are filling the cistern, you can take the efficiency of both the pipes as positive.

Q. 5) Two pipes can fill a cistern in 3 hours and 3 hours 45 minutes respectively and a third pipe can empty the whole cistern in an hour. The cistern is half full of water and all the three pipes are opened together. The time after which the cistern will be emptied, is

(A) 1 hour 45 minutes
(B) 45 minutes
(C) 1 hour 15 minutes
(D) 1 hour 30 minutes

Let the total work be 15 units.
Efficiency of first pipe = 15/3 = +5 units
Efficiency of second pipe = 15/3.75 = +4 units
Efficiency of third pipe = 15/1 = -15 units
Efficiency of all the three pipes = 5 + 4 – 15 = -6 units
If all the pipes are opened, it will take 15/6 or 5/2 hours to empty the cistern, but the cistern is

already half empty, hence only 5/4 hours are required to empty it.
Answer: (C)

Q. 6) A cistern is provided with two pipes A and B. A can fill it in 20 minutes and B can empty it in 30 minutes. If A and B be kept open alternately for one minute each, how soon will the cistern be filled ?

(A) 121 minutes (B) 110 minutes
(C) 115 minutes (D) 120 minutes

Let the total work = 60 units
Efficiency of A = 60/20 = +3 units
Efficiency of B = 60/30 = -2 units
Now total work to be performed is 60 units. When 57 units work is complete, A will take 1 more minute to add 3 units and hence will make it a total of 60 units.
Hence time taken to fill the tank = Time taken to perform 57 units of work + 1 minute
Now A and B are opened alternatively. That means for the first minute only A is opened, for the second minute A is closed and B is opened, then for third minute again B is closed and A is opened and so on.
So for each 2 minutes cycle, work done = Efficiency of A + Efficiency of B = +3 + (-2) = 1 unit
1 unit work is done in 2 minutes, so 57 units work is done in 114 minutes
Time taken to fill the tank = 114 + 1 = 115 minutes
Answer: (D)
Explanation : We have to perform a total of 60 units of work. For the 1st minute - A adds 3 units of work, but in the 2nd minute, B adds (-2) units of work and hence makes total work for 2 minutes = (+3) + (-2) = 1 unit. So effectively in 2 minutes, we are just adding 1 unit of work. Hence in 4 minutes, 2 units of work will be performed and in 6 minutes 3 units of work will be performed. Same sequence will continue till 57 units. As soon as 57 units of work is done (in 114 minutes), it will be A's turn to do the work. A will add 3 units of work(in 1 minute) and hence take the total work from 57 units to 60 units. B won't be needed any more.

Q. 7) If 40 men or 60 women or 80 children can do a piece of work in 6 months, then 10 men, 10 women and 10 children together do half of the work in

(A) $5\frac{6}{13}$ months (B) 6 months
(C) $5\frac{7}{13}$ months (D) $11\frac{1}{13}$ months

Let the total work be 240 units.
40 men complete the work in 6 months. Hence 10 men can complete the work in 6*4 = 24

months. Hence, Efficiency of 10 men = 240/24 = 10 units
60 women complete the work in 6 months. Hence 10 women can complete the work in 6*6 = 36 months. Hence, Efficiency of 10 women = 240/36 = 20/3 units
80 boys complete the work in 6 months. Hence 10 boys can complete the work in 6*8 = 48 months. Hence, Efficiency of 10 boys = 240/48 = 5 units
Efficiency of 10 men + Efficiency of 10 women + Efficiency of 10 boys = 10 + 20/3 + 5 = 65/3 units
So, 10 men, 10 women and 10 boys complete 65/3 units of work in 1 month. To complete 120 units(half of the work), they will take = 120 * 3/65 = 72/13 months
Answer: (C)

Q. 8) 2 men and 1 women can complete a piece of work in 14 days while 4 women and 2 men can do the same work in 8 days. If a man gets ₹ 180 per day, then a woman will get per day
(A) ₹ 120 (B) ₹ 160
(C) ₹ 150 (D) ₹ 140

Let the total work be 112 units and the efficiency of 1 man and 1 woman be m and w respectively
2m + w = 112/14 = 8
4w + 2m = 112/8 = 14
Solve the equations and you will get w = 2 and m = 3
Hence the wage of woman = 2/3 * 180 = Rs. 120
Answer: (A)

Q. 9) *A*, *B* and *C* are employed to do a piece of work for ₹ 575. *A* and *C* are supposed to finish $\frac{19}{23}$ of the work together. Amount shall be paid to *B* is
(A) ₹ 210 (B) ₹ 100
(C) ₹ 200 (D) ₹ 475

A and C complete 19/23 of the work. Hence B does 4/23 of the work
Amount paid to B = 4/23 * 575 = Rs. 100
Answer: (B)

Q. 10) Two workers A and B are engaged to do a piece of work. A working alone would take 8 hours more to complete the work than when work together. If B worked alone, would take $4\frac{1}{2}$ hours more than when work together. The time required to finish the work together is

(A) 4 hours (B) 6 hours
(C) 5 hours (D) 8 hours

Let A and B complete the work in x days
Then A will complete the work in (x + 8) days and B will complete the work in (x + 4.5) days.
Now,
1/(x + 8) + 1/(x + 4.5) = 1/x
Solve the equation and you will get x = 6 hours
Answer: (D)

Q. 11) Three men A, B, C working together can do a job in 6 hours less time than A alone, in 1 hour less time than B alone and in one half the time needed by C when working alone. Then A and B together can do the job in

(A) $\frac{2}{3}$ hours (B) $\frac{3}{4}$ hours
(C) $\frac{3}{2}$ hours (D) $\frac{4}{3}$ hours

The question is same the previous one.
Let A, B and C take 'x' days to do the job. Then,
A takes (x + 6) days, B takes (x + 1) days and C taken 2x days
1/(x + 6) + 1/(x + 1) + 1/2x = 1/x
1/(x + 6) + 1/(x + 1) = 1/x – 1/2x
1/(x + 6) + 1/(x + 1) = 1/2x ... (1)
Solve it and you will get x = 2/3
From equation (1) you can see that A and B take 2x days to complete the work
Answer: (D)
Note: In the complete Time and Work series, Efficiency would mean "Work Done in 1 day", and efficiency has been denoted by small letters, e.g. "a" means "Efficiency of A".

Q. 1) Pratibha is thrice as efficient as Sonia and is therefore able to finish a piece of work in 60 days less than Sonia. Pratibha and Sonia can individually complete the work respectively in

(A) 30, 60 days (B) 60, 90 days
(C) 30, 90 days (D) 40, 120 days

If Pratibha finishes the work in X days, then Sonia will take 3X days to finish the same work
Given 3X – X = 60
Or X = 30
Pratibha takes 30 days and Sonia takes 90 days
Answer: (A)

Q. 2) Sunil completes a work in 4 days, whereas Dinesh completes the work in 6 days. Ramesh works $1\frac{1}{2}$ times as fast as Sunil. The three together can complete the work in

(A) $1\frac{5}{12}$ days (B) $1\frac{5}{7}$ days
(C) $1\frac{3}{8}$ days (D) $1\frac{5}{19}$ days

Let the total work be 24 units.
Efficiency of Sunil = 24/4 = 6 units (Since Sunil takes 4 days to complete the work)
Efficiency of Ramesh = 6 * 1.5 = 9 units (Since Ramesh is 1.5 times efficient as Sunil)
Efficiency of Dinesh = 24/6 = 4 units ((Since Sunil takes 6 days to complete the work))
Efficiency of (Sunil + Ramesh + Dinesh) = 6 + 9 + 4 = 19 units
Time required to finish the complete work = 24/19 days
Answer: (D)

Q. 3)

Two workers A and B working together completed a job in 5 days. If A worked twice as efficiently as he actually did and B worked $\frac{1}{3}$ as efficiently as he actually did, the work would have been completed in 3 days. To complete the job alone, A would require

(A) $5\frac{1}{5}$ days (B) $6\frac{1}{4}$ days

(C) $7\frac{1}{2}$ days (D) $8\frac{3}{4}$ days

Let the total work be 15 units. Efficiency of A = a and Efficiency of B = b
A and B complete the work in 5 days.
Hence efficiency of A and B = 15/5 = 3 units
So, a + b = 3 … (1)
New efficiency of A = 2a
New efficiency of B = b/3
With new efficiency the work was completed in 3 days.
So, 2a + b/3 = 15/3 = 5 … (2)
Solve (1) and (2), you will get a = 12/5 = 2.4 units
So A will complete 15 units work in 15/2.4 or 25/4 days
Answer: (B)

Q. 4)

A takes three times as long as B and C together to do a job. B takes four times as long as A and C together to do the work. If all the three, working together can complete the job in 24 days, then the number of days, A alone will take to finish the job is

(A) 100 (B) 96

(C) 95 (D) 90

Let the total work be 24 units
Given, 3*Efficiency of A = Efficiency of B + Efficiency of C
3a = b + c
A, B and C compete the work in 24 days.
Hence, a + b + c = 24/24 = 1 or 4a = 1 [Put b + c = 3a]
a = 1/4 = 0.25 unit
A completes 0.25 unit work in 1 day. So to complete 24 units of work, he will take 24/0.25 = 96 days
Answer: (B)

Q. 5) A man is twice as fast as a woman and a woman is twice as fast as a boy in doing a work. If all of them, a man, a woman and a boy can finish the work in 7 days, in how many days a boy will do it alone?
(A) 49 (B) 7 (C) 6 (D) 42

Let the total work be 7 units. Since they all complete the work in 7 days, so their total efficiency = 7/7 = 1 unit
Let efficiency of boy = x
Then efficiency of women = 2x
Efficiency of man = 4x
x + 2x + 4x = 1
7x = 1 or x = 1/7
The boy completes 1/7 work in 1 day, so to complete 7 units of work, he will take 49 days
Answer: (A)

Q. 6) 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 alone take to do it?
(A) 50 days (B) 30 days
(C) 40 days (D) 45 days

A does 1/2 as much work as B in 3/4 of the time. Hence A will do (1/2 + 1/2) or complete work in (3/4 + 3/4) or 1.5 times more time than B.
A = 1.5B (where A = no. of days taken by A to finish the work and B = no. of days taken by B to finish the work)
Also A*B/(A+B) = 18
Put A = 1.5B in the above equation and solve
B = 30 days
Answer: (B)

Q. 7) A can do a piece of work in 20 days and B in 30 days. They work together for 7 days and then both leave the work. Then C alone finishes the remaining work in 10 days. In how many days will C finish the full work ?

(A) 25 days (B) 30 days
(C) 24 days (D) 20 days

Let the total work = 60 units
Efficiency of A = 60/20 = 3 units
Efficiency of B = 60/30 = 2 units
Efficiency of (A + B) = 5 units
Work done by A and B in 7 days = 5*7 = 35 units
Work left = 60 – 35 = 25 units
C completes 25 units of work in 10 days. Hence he will complete 60 units of work in 10* 60/25 = 24 days
Answer: (C)

Q. 8) *A*, *B* and *C* can do a job in 6 days, 12 days and 15 days respectively. After $\frac{1}{8}$ of the work is completed, *C* leaves the job. Rest of the work is done by *A* and *B* together. Time taken to finish the work is

(A) $5\frac{5}{6}$ days (B) $5\frac{1}{4}$ days
(C) $3\frac{1}{2}$ days (D) $3\frac{3}{4}$ days

Let total work be 120 units.
Efficiency of A = 120/6 = 20 units
Efficiency of B = 120/12 = 10 units
Efficiency of C = 120/15 = 8 units
Work left = 7/8 * 120 = 105 units
Efficiency of A + B = 30 units
Hence time taken by A and B to complete 105 units of work = 105/30 = 3.5
Answer: (C)

Q. 9) A, B and C together can do a piece of work in 40 days. After working with B and C for 16 days, A leaves and then B and C complete the remaining work in 40 days more. A alone could do the work in

(A) 80 days (B) 90 days
(C) 100 days (D) 120 days

Let the total work = 80 units
Efficiency of (A + B + C) = 80/40 = 2 units
Work done by (A + B + C) in 16 days = 16 * 2 = 32 units
Remaining work = 80 – 32 = 48 units
B and C complete the remaining work (48 units) in 40 days.
Efficiency of B + C = 48/40 = 1.2 units
Efficiency of A = Efficiency of (A + B + C) - Efficiency of (B + C) = 2 – 1.2 = 0.8 unit
Time taken by A to complete the whole work = 80/0.8 = 100 days
Answer: (C)

Q. 10) A and B can do a piece of work in 45 and 40 days respectively. They began the work together but A leaves after some days and B finished the remaining work in 23 days. A left after

(A) 12 days (B) 5 days
(C) 6 days (D) 9 days

Let the total work = 360 units
Efficiency of A = 360/45 = 8 units
Efficiency of B = 360/40 = 9 units
Efficiency of A + B = 17 units
Let A left after x days, that means A and B worked together for x days. Total work done by A and B together = 17x
Then the remaining work is finished by B in 23 days. Hence work done by B alone = 23 * 9 = 207 units
So, 17x + 207 = 360
Or x = 9 days
Answer: (D)

Q. 11) P and Q together can do a job in 6 days. Q and R can finish the same job in 60/7 days. P started the work and worked for 3 days. Q and R continued for 6 days. Then the difference of days in which R and P can complete the job is
(A) 8 (B) 12 (C) 10 (D) 15

This question appeared in SSC Tier-2 2015, and stumped many candidates. Although there is nothing tricky about it.
Let the total work be 60 units.
p + q = 60/6 = 10
q + r = 60*7/60 = 7
Given, Total work done = 3 days work of P + 6 days work of Q and R
60 = 3*p + 6*(7)
p = 6
Hence time taken by P to complete the work = 60/6 = 10 days
p + q = 10, hence q = 4
q + r = 7, hence r = 3
Hence time taken by R to complete the work = 60/3 = 20 days
Difference = 20 - 10 = 10 days
Answer : (C)

Q. 12) 4 Men and 6 Women working together can complete the work in 10 days. 3 men and 7 women working together will complete the same work in 8 days. In how many days 10 women will complete this work?

One day work for a man = 1/m
One day work for a woman = 1/w
In one day, 4 men and 6 women will do 1/10 of the work. Hence,
4/m + 6/w = 1/10 ... (i)
Similarly,
3/m + 7/w = 1/8 ... (ii)
Multiply equation (i) with 3 and equation (ii) with 4
12/m + 18/w = 3/10
12/m + 28/w = 1/2
Subtract the equations
10/w = 1/5
So 10 women will complete the work in 5 days
Answer: (5)

- If M_1 men can do W_1 work in D_1 days working H_1 hours per day and M_2 men can do W_2 work in D_2 days working H_2 hours per day, then

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

Here W is the work. For e.g., if 5 men are cutting 10 trees in 2 days, working 4 hours per day. Then,
M = 5, D = 2, H = 4 and W = 10.

Q. 1) A farmer can plough a field working 6 hours per day in 18 days. The worker has to work how many hours per day to finish the same work in 12 days ?
(A) 7 (B) 9
(C) 11 (D) 13

H1 = 6
D1 = 18
D2 = 12
H2 = ?
We know, H1 * D1 = H2 * D2
6 * 18 = H2 * 12
H2 = 9 hours
Answer : (B)

Q. 2) 15 men take 20 days to complete a job working 8 hours a day. The number of hours a day should 20 men take to complete the job in 12 days
(A) 5 hours (B) 10 hours
(C) 15 hours (D) 18 hours

M1 = 15
D1 = 20
H1 = 8
M2 = 20
D2 = 12
H2 = ?
We know, M1 * D1 * H1 = M2 * D2 * H2
15*20*8 = 20*12*H2
H2 = 10 hours
Answer : (B)

Q. 3) Having the same capacity 9 taps fill up a water tank in 20 minutes. How many taps of the same capacity required to fill up the same water tank in 15 minutes ?
(A) 10 (B) 12 (C) 15 (D) 18

In this question, Taps = Men
Number of taps required = 20*9/15 = 12
Answer : (B)

Q. 4) A certain number of men can finish a piece of work in 100 days. However, if there were 10 men less, then it would take 10 days more for the work to be finished. How many men were there originally ?

(A) 75 (B) 50
(C) 100 (D) 110

Let there be X number of men.
X men can finish a piece of work in 100 days. Hence total work = 100X
If there were (X - 10) men, it would have taken 110 days to finish the work. Total work in this case = 110(X - 10)
Total work remains the same. Hence,
100X = 110(X - 10)
X = 110
Answer : (D)

Q. 5) Subhash can copy 50 pages in 10 hours; Subhash and Prakash can copy 300 pages in 40 hours. In how much time can Prakash copy 30 pages ?

(A) 9 hours (B) 13 hours
(C) 10 hours (D) 12 hours

Efficiency of Subhash = 50/10 = 5 per hour
Efficiency of Subhash and Prakash = 300/40 = 7.5 per hour
Efficiency of Prakash = (Efficiency of Subhash and Prakash) - (Efficiency of Subhash) = 7.5 - 5 = 2.5
So Prakash can copy 2.5 pages per hour. To copy 30 pages, he would require 30/2.5 or 12 hours.
Answer : (D)

Q. 6) 40 men can finish a piece of work in 60 days. After some days, 10 men leave the work so that the work is finished in 70 days. The number of days after which 10 men left the work is

(A) 20 days (B) 25 days
(C) 30 days (D) 40 days

40 men can finish a work in 60 days. Hence, total work = 40*60 = 2400
Let the 10 men left after X days.
For X days, all the 40 men worked. Total work performed = 40X
Now when 10 men quit, only 30 men were left to do the work and they took (70 - X) more days to finish it.
Total work done by 30 men = 30*(70 - X)
Now, 40X + 30*(70 - X) = 2400
X = 30 days
Answer : (C)

Q. 7) A and B can do a piece of work in 45 and 40 days respectively. They began the work together but A leaves after some days and B finished the remaining work in 23 days. A left after

(A) 12 days (B) 5 days
(C) 6 days (D) 9 days

Let the total work = 360 units
Efficiency of A = 360/45 = 8 units
Efficiency of B = 360/40 = 9 units
Efficiency of A + B = 17 units
Let A left after X days.
For X days, both A and B worked. Hence work performed = 17X
B worked for 23 days. Hence work performed by B = 23*9 = 207 units
Now, 17X + 207 = 360
X = 9 days
Answer : (D)

Q. 8) A, B, C are employed to do a piece of work for ₹ 5,290. A and B together are supposed to do $\frac{19}{23}$ of the work and B and C together $\frac{8}{23}$ of the work. Then A should be paid

(A) ₹ 1,950 (B) ₹ 2,290
(C) ₹ 4,250 (D) ₹ 3,450

B and C together do 8/23 of the work, hence A does (1 - 8/23) or 15/23 of the work.
A should be paid = 15*5290/23 = Rs. 3450
Answer : (D)
Note : In this question, they have asked the wages of A. Had they asked the wages of B, firstly you would have calculated the work performed by B with the formula-
Work done by B = (Portion of work done by A and B) + (Portion of work done by B and C) - 1
Work done by B = 19/23 + 8/23 - 1 = 4/23
Wages of B = 4*5290/23 = Rs. 920

Q. 9) A company employed 200 workers to complete a certain work in 150 days. If only $\frac{1^{th}}{4}$ of the work has been done in 50 days, then in order to complete the whole work in time, the number of additional workers to be employed was

(A) 300 (B) 200
(C) 100 (D) 600

This is a very famous question. A company employed 200 workers to complete a certain work in 150 days. Here the total work is not 200*150 because 200 workers and 150 days was only a plan. In reality, only 1/4th of the work has been done in 50 days. So if they go with the same pace, 200 workers will take 200 days to complete the work.
So total work = 200*200 units
200 workers have worked for 50 days. Hence they have finished 200*50 units of work.
Remaining work = 200*200 - 200*50 = 200*150
Let the number of additional workers required = X.
Now (200+X) workers will work for 100 days to finish the work as per the schedule.
Work they need to perform = (200 + X)*100
Now, (200 + X)*100 = 200*150
X = 100
Answer : (C)

Q. 10) A contractor undertook to finish a certain work in 124 days and employed 120 men.After 64 days,he found that he had already done 2/3 of work. How many men can be discharged now so that the work may finish in time?
A) 56 B) 44 C) 50 D) 60

120 workers finish 2/3 of the work in 64 days. So to complete the whole work, workers will take 64*3/2 or 96 days.
Total work to be performed = 120*96
Now the workers have already finished 2/3 of the work and only 1/3 work has to be performed.
Remaining work = 120*96/3 = 120*32
Let the contractor discharges X men. Remaining workers = 120-X. These workers will continue the work for (124-64) or 60 days. Hence,
120*32 = (120-X)*60
X = 56
Answer : (A)
Method 2
M1 = 120, D1 = 64, W1 = 2/3
M2 = 120 – x, D2 = 60, W2 = 1/3
(M1*D1)/W1 = (M2*D2)/W2
120*64*3/2 = (120 - x)*60*3
x = 56

Q. 11) A swimming pool is fitted with three pipes. The first two pipes working simultaneously, fill the pool in the same time as the third pipe alone. The second pipe alone fills the pool 5 hours faster than the first pipe and 4 hours slower than the third pipe. In what time will the second and third pipes together fill the pool ?
(A) 3 hours (B) 3.75 hours
(C) 4 hours (D) 4.75 hours

Let the second pipe fills the pool in X hours. Then first pipe takes (X+5) hours and the third pipe takes (X-4) hours to fill the pool. Now, 1st and 2nd pipe together take the same time to the fill the pool as the 3rd pipe alone. Hence,
1/(X+5) + 1/(X) = 1/(X - 4)
Solve this quadratic equation and you will get X = 10 hours
That means second pipe takes 10 hours to fill the pool while the third pipe takes 6 hours.
Together they will take 10*6/(10 + 6) hours to fill the pool.
Answer: (B)

Sample Questions –

1. Shambhu is twice as good as workman as Bablu and together they finish a piece of work in 18 days. Find the total number of days in which Bablu can finish the work.

a) 27 days

b) 54 days

c) 56 days

d) 68 days

Answer: Option B

Explanation:- As per question, Shambhu does twice the work as done by Bablu. So A:B = 2:1. Also (Shambhu+Bablu) one day work is 1/18

To get days in which Bablu will finish the work, lets calculate work done by Bablu in 1 day =(118 ∗13)=154. So Bablu will complete the work in 54 days

2. Ritu can complete a piece of work in 5 days, but with the help of her son she can do it in 3 days. Find the time taken by the son alone to complete the work.

a) 7.5 days

b) 13 days

c) 11 days

d) 9 days

Answer: Option **A**

Explanation:- In this type of question, where we have one person work and together work done. Then we can easily get the other person work just by subtracting them. As,
Son's one day work = (1/3 −1/5)=(5−3/15)=2/15

So son will do whole work in 2/15 days
which is = 7.5 *days*

3. Two pipes can fill the cistern in 10 hr and 12 hr respectively, while the third pipe can empty it in 20 hr. Simultaneously, if all the pipes are opened then the cistern will be filled in

a) 7.5 hr

b) 8 hr

c) 5 hr

d) 10 hr

Answer – **(A)**

Explanation:- Work done by all the tanks working together in 1 hour.
⇒ 1/10+1/12-1/20=2/15. Hence, tank will be filled in 15/2= 7.5 hour.

4. Mr. Chawla is on tour and he has Rs 360 for his expenses. If he exceeds his tour by 4 days he must cut down daily expenses by Rs 3. The number of days of Mr. Chawla's tour programme is

a) 28 Days

b) 24 Days

c) 22 Days

d) 20 Days

Answer – **(D)**

Explanation:- Let Mr. Chawla under takes a tour of x days.

Then, expenses for each day =360/x

360/x+4=360/x–3

⇒ x=20 and −24

Hence, x= 20 days