MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

TIME AND WORK PIPES AND CISTERNS

Solved Examples

1. If 20 men take 30 days to complete a job, in how many days can 25 men complete the job?

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2. Fifteen men take 10 days to complete a job working 12 hours a day.How many hours a day should 10 men work to complete the job in 20 days ?

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3. A piece of work can be done by 16 men in 8 days working 12 hours a day. How many men

are needed to complete another work, which is three times the first one, in 24 days working 8 hours a days ?

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4. A can do a piece of work in 9 days and B can do the same in 12 days. In how days can the work be completed if A and B work together?

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5. A and B together can do a piece of work in 12 days and A alone can complete the work in 18 days. How long will B alone take to complete the job ?

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6. A and B together can do a piece of work in 12 days, B and C can do it in 15 days and C and A can do the same work in 20 days. How long would each of them take to complete the job?

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7. To complete a certain work, C working alone takes twice as long as A and B working together. A working alone takes 3 times as long as B and C working together. All the three together can complete the work in 5 days. How long would each take to complete th work individually?

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8. 4 men or 5 women can construct a wall in 82 days. How long will it take for 5 men and 4 women to do the same ?

A. $40 days$

B. $38 days$

C. $44 days$

D. $50 days$

Answer: A

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9. If 9 men and 12 boys can do a piece of work in 4 days and 4 men and 16 boys can do the same work in 6 days, how long will 6 men and 24 boys take to complete the same work?

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10. X works 3 times as fast as Y and is able to complete a work in40 days less than the number of days taken by Y. Find the time in which they can complete the work together.

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11. A and B can do a piece of work in 10 days and 15 days respectively. They started the work together but B left after sometime and A finished the remaining work in 5 days. After how many days from the start did B leave ?

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12. A and B can do a piece of work in 6 days and 9 days respectively, they work on

alternative days starting with A on the first day. In how many days will the work be completed ?

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13. One man and 3 boys can together complete a piece of work in 10 days. One women alone can complete it in 30 days. How many women should accompany 3 men and 9 boys to complete the same work in 2 days ?

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14. P,Q and R started a piece of work. They worked on it for 5 days, which P left

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15. A,B and C can do a piece of work in 4 days, 5 days and 7 days respectively. They get ₹ 415 for completing the job. If A, B and C have worked together to complete the job, what is A's share?

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16. Two men P and Q can complete a job in 6 days and 8 days respectively. The total remuneration for the job is ₹ 600. If they completed the job with the help of a woman in 3 days, find the shares of P,Q and the women respectively.

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17. Two pipes A and B can fill a tank in 12 minutes and 18 minutes respectively. If both the pipes are opened simultaneously, how long will they take to fill the tank ?

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18. Pipe A can fill a tank in 12 minutes,pipe B in 18 minutes and pipe C can empty the full tank in 36 minutes. If all of them are opend

simultaneously, find the time taken to fill the empty tank.

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19. Two taps P and Q can fill an empty tank in 15 hours and 30 hours respectively. Both taps were opened at 4 a.m. and after some time, tap Q was closed. It was found that the tank was full at 4 p.m. At what time was the tap Q shut ?

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20. Three pipes X, Y and Z are fitted to a tank. For any pipe, the rate of filling is the same as that of the rate of empting. The rates of filiing of X, Y and Z are in the ratio $2:3:4$. X alone can fill the tank in 5 hours. Find the time taken in hours, to fill the tank if X is used as an emptying pipe while the other two are used as filling pipes.

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Test Your Concepts Very Short Answer Type Questions

1. Pipe A can fill a tank in 4 hours, then time taken by it to fill 3/4th part of the tank is .....

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2. X and Y can do a piece of work in 20 days and 30 days respectively. The time they take to

complete the work by working together is .....

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3. A can-do 1/3rd of work in 12 days. Then A can do 3/4th of work in .....days.

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4. A is thrice as fast as B. If B can do a piece of work in 60 days, the number of days they take

to complete the work is .....

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5. A is thrice as good workman as B. The ratio of work done by A and B in the same time is .....

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6. Pipe X can fill a tank in 30 minutes and pipe Y can empty it in 20 minutes. Both are opened

simultaneously and the tank is filled in 1 h. (True/False).

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7. A pipe can fill a tank in 4 hours and another pipe can empty the same tank in 6 hours. When both the pipes are opened simultaneously, the part of tank filled in 1 hour is .....

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8. A,b and C can do a piece of work in 3,4 and 6 days respectively. The ratio of their work capacities is .....

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9. A is twice as fast as B and together they can complete a work in 20 days. In how many days can A alone complete the work?

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10. If 6 boys can eat 6 apples 6 minutes then, 3 boys can eat 3 apples in ..... Minutes.

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11. Working together, X and Y can do a piece of work in 12 days, Y and Z can do it in 15 days where as X and Z can do it in 20 days. Who is the most effcient?

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12. A and B can do 1/2 and 2/3rd parts of a work in a given time. The ratio of time taken by A and B to complete a work is .....

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13. In a unit time, the work done by 3 men and 5 women is equal to the work done by 2 men and 7 women. The work done by one man is equal to the work done by ..... women.

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14. A can type 30 words in 1 minutes and B can type 20 words in 1 minute. Both A and B can type ..... Words in 1 minute.

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15. Twelve men can make 24 articles in 6 days. How many articles can 3 men make in days?

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16. In a unit time, the work done by 3 men is equal to the work done by 6 women. The ratio of work done by a man to that of a woman is .....

17. X can knit 60 baskets in 8 day with the help of Y, who is having the same capacity as X,X can knit ..... Number of baskets in 4 days.

18. X, Y and Z can complete a piece of work in 10 days. X and Y can do it in 20 days. Then Z alone can complete the work in ..... days.

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19. A can complete a piece of work working along with B in 20 days. If he can complete the same work working along with C in 10 days, then between B and C who is more efficient ?

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20. Tap A can fill a tank of 1000 litres capacity in 14 hours. It can fill a tank of ..... litres in 7 hours.

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21. X persons can complete a work in Y days. Then, 3X persons can complete the same work in ..... Days and $\frac{x}{3}$ persons can complete the same work in ..... Days.

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22. Thirty men can lay a road of length 8 km in 8 days. The number of men required to lay-the road of length 16 km in 16 days is .....

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23. The ratio of the number of days required by A,B and C to do a piece of work hours is $1:2:3$. Then, the ratio of work is .....

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24. By working 8 hours a day. A can complete a work in 10 day. If the reduces the work hours by 3 hours per day, them he can complete the same work in ..... Days.

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25. Satish, Goel and Khan can do a particular job in 24,36 and 48 days respectively. If they

start working together and are paid ₹ 5200 for their work, then find their individual shares.

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26. Two persons X and Y together can do a particular job in 36 days. If X's ability to do the work is twice that of Y, then find the number of days in which X and Y can do the work individually.

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27. If a man cando a piece of work in 8 hours and a women can do the same work in 12 hours, then find the time it takes for 2 men and 3 women to finish the same work.

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28. A and B can do a work in 45 days, B and C in 36 days and A and C in 60 days. In how many days can A,B and C individually do the work?

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29. Tap A is 50% more efficient than tap B. If tap A can fill a tank in 10 hrs, then tap B can fill the tank in .....

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30. A certain number of men can do a job in 10 days, working 6 hours a day. If the number of men is decreased by $\frac{1}{3}rd$, then in how many days can the remaining men complete the work, working 9 hours per day?

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Short Answer Type Questions

1. A can do a piece of work in 20 days while B can do it in 30 days. Both of them start the work together and work for some time, then B leaves. If A completes the remaining work in 10 days, then find the number of days for which they worked together.

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2. If Ramesh can complete 2/5th of a work in 24 days and Satish can complete 1/3rd of the work in 30 days, then in how many days can they complete the work if they work together?

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3. Three friends Priya, Usha and Spandana together can do a piece of work in 56 days. If Usha's ability to do the work is twice as that of Spandana and Priya's ability to do the work is twice as that of Usha, then find the number of

days required for these friends to complete the same work if they work individually.

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4. Satish can do 1/5th of a work in 5 days while he and Ramesh together can do 9/10th of the same work in 10 days. They start the work together and work for 5 days after which Satish leaves. Find the number of days in which Ramesh alone can finish the remaining work.

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5. A and B together can do a piece of work in 20 days, while B and C together can do the same work in 15 days. If A ,B and C together can finish this work in 10 days, then find the number of days in which B alone can finish the work.

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6. Two pipes X and Y can fill a tank in 6 hours and 8 hours respectively while another pipe Z can empty the tank in 4.8 hours. If all the three pipes are opened at the same time, then the time in which the tank can be filled.

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7. 4 women and 3 men can do a piece of work in 2 days while 6 women and 2 men can also finish it in 2 days. Now find the time taken by

one woman to complete the same job working alone. Also, find the time one man takes to complete the same job working alone.

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8. A tank has two inlet pipes, A and B, which can fill the tank in 12 hours and 18 hours respectively, and an outlet C which can empty the tank in 9 hours. A,B and C are all opened at a time but the outlet C is blocked completely

after 6 hours. Find the total time taken right from the start to fill the tank.

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9. A,B and C can do a work in 20,45 and 120 days respectively.They started the work. A left 10 days before and B left 5 days before the completion of work. In how many days is the total work completed ?

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10. Two pipes P and Q can fill a cistern in 15 minutes and 20 minutes respectively. Both are opened together, but at the end of 5 minutes, the pipe P is turned off. How long will the pipe Q take to fill the cistern ?

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11. A and B can do a piece of work in 12 days, B and C in 15 days and C and A in 20 days. In how many days can they do it, all working together?

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12. A garrison of of 2000 men is provisioned for 15 weeks at the rate of 1.5 kg per day per men. How many men must leave so that the same provisions may last for 30 weeks at 1 kg per day ?

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13. A garrion had provisions for 1500 men for 30 days. After some days, 300 more men joined the garrison. The provisions lasted for a total of 26 days from the beginning. After how many days did the new men join ?

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14. A and B can do a work in 12 days and 17 days respectively and with the help of C they

complete the work in 5 days and earn ₹ 238. Find the share of B.

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15. A and B can do a work in 30 days and 10 days respectively. If they work on alternate days beginning with A, in how many days will the work be completed?

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Essay Type Question

1. A boy and his mother together can do a piece of work in 24 days while the day, working with his father, can complete it in 18 days. If the mother and father together take 36 days to complete the same work, then find the time in which they can complete the work if all the three work together. Also find the time they would take to complete the job, if they work individually.

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2. A certain number of men can do a work in 15 days working 8 hours a days.If the number of men is decreased $\frac{1}{3}$, then in how many days can twice the previous work be completed by the remaining men working 5 hours per day?

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3. A motor pumps water from a well into a tank at the rate of 3000 c.c./sec while another outlet pumps water out of the tank at the rate

of 1800 c.c./sec. If the capacity of the tank is 72×10^6c.c., then find the time required for the tank to get filled if both the motor and outlet are in operation (in minutes).

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4. The capacities of A,B and C to complete a piece of work is $1:2:3$. By working together, the thre of them can complete the work in 24 days. In how many days can C alone complete it ?

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5. Fifteen men can complete a piece of work in 10 days, working 8 hours per day. How many persons are required to complete double the work in 25 days, working 6 hours per day ?

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Concept Application Level 1

1. A and B working together can complete a piece of work in 6 days, B and C in 10 days, C and A in $7\frac{1}{2}$ days. The number of days required by A,B and C respectively to complete the work individually is

A. 15,20,30

B. 10,20,30

C. 10,15,30

D. 20,15,10

Answer: C

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2. A can do $\frac{1}{4}$th of a piece of work in one day. While B can do $\frac{1}{6}$th of the work in a day. In how many days can they do the same work, working together?

A. $2\frac{1}{5}$

B. 2

C. $2\frac{2}{5}$

D. $\frac{5}{15}$

Answer: C

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3. A एक कार्य को 12 दिन में पूरा कर सकता है जबकि B उसे 15 दिन में पूरा कर सकता है वे उसे एक साथ मिलकर Rs 450 में करने ko तैयार को जाता है इस धनराशि में A का हिस्सा कितना होगा ?

A. ₹ 275

B. ₹ 225

C. ₹ 250

D. ₹200

Answer: C

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4. A can do a piece of work in 10 days and B can do it in 15 days. After they have worked together for 4 days, A does away and B completes the remaining work. In how many days B complete the remaining work ?

A. 10

B. 5

C. 15

D. 20

Answer: B

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5. A works 3 times as fast as B. If B can complete a work in 60 days, then in how many days can A and B together complete the same work ?

A. 20

B. 12

C. 15

D. 30

Answer: C

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6. A and B can do $\frac{4}{5}$th and $\frac{3}{5}$th of a piece of work in 15 days and 10 days respectively. In how many days can A and B working together

complete the work, if B worked for 5 days without A ?

A. $6\frac{2}{17}$

B. $6\frac{10}{17}$

C. $6\frac{3}{17}$

D. $6\frac{12}{17}$

Answer: C

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7. Rakesh and Siva can do a piece of work in 15 days and 18 days respectively. They work together for 5 days and then Rakesh leaves. In how many days will Siva alone finish the remaining work?

A. 5

B. 6

C. 8

D. 7

Answer: D

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8. Twelve men can do a piece of work in 15 days. How many men are required to complete a work which is three and a half times the original work in 10 days ?

A. 18

B. 54

C. 63

D. 70

Answer: C

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9. Working individually, A and B can complete a piece of work in 30 days and 45 days respectively. If B joins A after some days and the whole work is completed in 20 days from the beginning, after how many days does B join A ?

A. 15

B. 10

C. 5

D. 12

Answer: C

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10. If 4 men or 6 women can do a piece of work in 24 days, then how many men should join 3 women to complete the work in 16 days

A. 6

B. 5

C. 4

D. 2

Answer: C

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11. Gauthan and Karthik can do a piece of work in 10 days and 20 days respectively. With the help of Nilesh, they can complete the whole

work in 5 days. In how many days can Nilesh alone complete the work ?

A. 10

B. 20

C. 15

D. 30

Answer: B

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12. P and Q undertook a piece of work for ₹ 37500. P alone can do it in 20 days, Q alone can do it in 30 days. With the help of R and P,Q finished the work in 8 days. What is the share of R ?

A. ₹ 14000

B. ₹ 13000

C. ₹12000

D. 12500

Answer: D

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13. A is twice as efficient as B and they together can complete a piece of work in 24 days. Find the number of days, that A alone takes to compelete the work.

A. 36

B. 18

C. 48

D. 30

Answer: A

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14. Two taps A and B can fill a tank in 15 minutes and 20 minutes respectively.If both the taps are opened simultaneouly, then in how much time can the empty tank be filled ?

A. $8\frac{4}{7}$hours

B. 8 minutes

C. $8\frac{4}{7}$ minutes

D. 16 minutes

Answer: C

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15. Malini can do a piece of work in 20 days, while Shalini can do it in 25 days. Shalini started the work and after 5 days Malini joined her.They together completed the remaining work. How ,many days did they take to complete the whole work?

A. $8\frac{1}{8}$

B. 8

C. $8\frac{8}{9}$

D. $13\frac{8}{9}$

Answer: D

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16. Working individually, A,B and C can finish a piece of work in 16 days. 20 days and 30 days respectively.In how many days can A,B and c

together complete a work which is $3\frac{1}{2}$ times the previous work ?

A. 30

B. 25

C. 24

D. 20

Answer: C

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17. A,B and C can do a piece of work in 12,18 and 9 days respectively. A started the work and worked for 4 days. Then B alone worked for 2 days. How many days would C alone take to complete the remaining work?

A. 5

B. 4

C. 3

D. 6

Answer: A

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18. Vinay and Varma can do a work in 30 days and 60 days respectively. If they work on alternate days beginning with Vinay, in how many days will the work be completed?

A. 45

B. 35

C. 40

D. 50

Answer: C

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19. An empty tank can be filled by two pipes individually in 30 minutes and 60 minutes respectively. There is also a pipe which can empty the full tank in 45 minutes.If all the three pipes are open,how much time does it take to fill the empty tank ?

A. 36 minutes

B. 18 minutes

C. 30 minutes

D. 24 minutes

Answer: A

20. One pipe can fill a tank in 40 minutes and an outlet pipe can empty the full tank in 24 minutes.If both the pipes are opened

simultaneously, what time will it take for the full tank to be emptied?

A. 30 minutes

B. 60 minutes

C. 15 minutes

D. 45 minutes

Answer: B

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21. A tap can fill a tank in 48 minutes whereas another tap can empty it in 2 hours. If both the taps are opened at 11:40 A.M, then the tank will be filled at $12:40\ \dot{PM}$. b. $1:00\ \dot{PM}$. c. $1:20\ \dot{PM}$. d. $1:30\ \dot{PM}$.

A. $12:40$ p.m.

B. $1:30$ p.m.

C. $1:00$ p.m.

D. $1:20$ p.m.

Answer: C

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22. Two taps A and B can fill a tank in 10 hours and 40 hours respectively. In how many hours will the tank be filled, if both the taps were opened simultaneously?

A. 5

B. 6

C. 7

D. 8

Answer: D

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23. Nitu alone can complete $\frac{4}{5}$th of a piece of work in 20 days. She works for 6 days and Deepak replaces her. He completes the work in another 38 days. In how many days can Deepak complete the entire work if he works alone?

A. 50

B. 25

C. 30

D. 45

Answer: A

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24. A and B can complete a piece of work in 12 days and 24 days respectivley. After A had worked for 6 days, B joined him and then they completed the work. How much should A

receive as his share from the total amount of ₹ 180 paid for completing the work?

A. ₹120

B. ₹135

C. ₹100

D. ₹150

Answer: D

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25. A can do one-third of a piece of work in 4 days and B can do one-fourth of the work in 6 days. How long will they take to complete the work, working together ?

A. 12 days

B. 6 days

C. 8 days

D. 10 days

Answer: C

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26. Six men and 4 women can do a piece of work in 32 days. Seven men and 12 women can do it in 18 days. In how many days can 18 men and 8 women do the same work, working together ?

A. 10

B. 12

C. 14

D. 16

Answer: B

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27. Nimai and Gaurang can complete a piece of work in 40 days and 60 days respectively. With Nityanand's help they completed the work in 10 days. If the total contract amount for completing the work is ₹4800, what is Nityanand's share ?

A. ₹1200

B. ₹800

C. ₹2800

D. ₹2500

Answer: C

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28. Two students A and B can finish solving some set of questions in 10 minutes and 15 minutes respectively. In what time will the task

be finished if B had started solving 3 minutes after A ?

A. 6 minutes 12 seconds

B. 7 minutes 12 seconds

C. 8 minutes 12 seconds

D. 9 minutes 12 seconds

Answer: B

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29. A certain number of people can complete can complete a piece of work in 12 days working 5 hours a day. If thenumber of men is decreased by half, how many hours a day should they work, so that the work is to be completed in 15 days ?

A. 10

B. 9

C. 8

D. 6

Answer: C

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30. The ratio of the rate of work done for a woman and a man is $2:1$. Six women can complete a piece of work in 20 days. If 2 women and 6 men work together, then in how many days will they complete the work ?

A. 24

B. 30

C. 20

D. None of the above

Answer: A

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31. A and B together can do a piece of work in 10 days. If A alone can do the work in 15 days, find in how many days that B alone can do the same work. The following are the steps involved in solving the above problem.

Arrange them in sequential order.

One day's work of B is $\frac{1}{10} - \frac{1}{5}$.

One day's work of A and B is $\frac{1}{10}$ and one day's work of A is $\frac{1}{15}$.

B alone can do the work in 30 days.

One day's work of B is $\frac{1}{30}$.

A. BADC

B. BDAC

C. BCAD

D. ABDC

Answer: A

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32. X can do a piece of work in 6 days while Y can do the same work in 8 days. Find in how many days X and Y together can do the same work?

The following are the steps involved in solving the above problem. Arrange them in sequential order.

One day's work of X is 1/6 one day's work of Y is 1/8

X can do a piece of work in 6 days and Y can do

the same work in 8 days.

X and Y together can do the same work in $3\frac{3}{7}$ days.

One day's work of X and $Y = \frac{7}{24}$

A. ABCD

B. BADC

C. BDAC

D. ABDC

Answer: B

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33. Thirty men can do a piece of work in 16 days working 8 hours a day. How many men are needed to complete another work, which is twice the first one, in 10 days working 12 working a day?

The following are the steps involved in solving the above problem. Arrange them in sequential order.

$$M_2 = \frac{30 \times 16 \times 8 \times 2x}{x \times 12 \times 10}$$

$$\frac{30 \times 16 \times 8}{x} = \frac{M_2 \times 12 \times 10}{2x}$$

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

$$M_2 = 64$$

A. CBAD

B. ACBD

C. ABCD

D. BACD

Answer: A

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Concept Application Level 2

1. Rishikesh and Mukesh can individually complete a piece of work in 18 days and 24 days respectively. On which day will the work be completed, If they work on alternate days starting with Rishikesh ?

A. 11th

B. 20th

C. 21st

D. 18th

Answer: C

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2. A can work twice as fast as B.A. and C together can work three times as fast as B. If A ,B and C complete a job in 30 days working together, in how may days can each of them complete the work?

A. 40,80,100

B. $60, 120, 120$

C. $50, 100, 120$

D. 60,100,80

Answer: B

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3. P and Q can individually complete a piece of work in 15 and 25 days respectively.In how many days can P and Q complete the work if they work in alternative days ?

Starting with P

Starting with Q?

A. 18,19

B. $18, \frac{191}{5}$

C. $18\frac{3}{5}, 19$

D. $18\frac{2}{5}, 19$

Answer: C

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4. Two taps A and B can fill a tank in 12 minutes and 20 minutes respectively.If both the pipes are opened for 10 minutes then the volume of water which overflows as a percentage of the volume of the tank is .....

A. 0.25

B. $16\frac{2}{3}\%$

C. 0.2

D. $33\frac{1}{3}\%$

Answer: D

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5. Wages for 30 women amounts to ₹ 60,000 in 36 days. If a man earns double of what a woman earns, then how many men must join 15 women to complete the work in 24 days? How much more is earned by the men than by the women ?

A. 10 men,₹15,000

B. 15 men, ₹20,000

C. 15 men, ₹30,000

D. 10 men, ₹30,000

Answer: B

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6. 6 men and 9 women can do a piece of work in 4 days.4 men and 3 women can do it in 8 days. In how many days can 20 men and 6 women do the same work ?

A. 2

B. 3

C. 1

D. 4

Answer: A

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7. A,B andC can complete a piece of work in 6,12 and 18 days respectively. A and B started the work and C joined them after one day. B left just 2 days before the completion of the whole

work.In how many days was the work completed?

A. 5

B. 4

C. 3

D. 2

Answer: B

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8. A and B can complete a piece of work in 10 and 15 days respectively. B starts the work and is joined by A after 5 days. If they earn a total of ₹60, what are their individual shares ?

A. ₹20,₹40

B. ₹24,₹36

C. ₹25,₹35

D. ₹30,₹30

Answer: B

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9. P worked on a job for 4 hours and then Q joined him. After 8 more hours,P stopped working and Q took 34 more hours to complete the remaining part of the job. If P and Q together can complete the job in 24 hours, how long will it take for each of them (in hours) to complete the job invidually?

A. 40,60

B. 48,60

C. 60,45

D. 40,30

Answer: A

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10. P,Q and R work together to complete a piece of work in x days. P and R take 20 days and 30 days respectively to complete the work. Q is faster than R and slower than P. If x is an integer, then how many values can it take ?

A. 1

B. 2

C. 3

D. 4

Answer: A

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11. P,Q and R can do a piece of work in 18 days, 36 days and 54 day respectively. They start the work together but Q and R leave 1 day and 5

days respectively, before the completion of work. In how many days has the work been completed ?

A. 10

B. 11

C. $10\frac{7}{11}$

D. $10\frac{9}{11}$

Answer: B

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12. Pipes A, B and C can fill an empty tank in 12 minutes, 24 minutes and 36 minutes respectively. Pipes D and E can empty the full tank in 18 minutes and 72 minutes respectively. If all of them are opened simultaneously, then find the time taken to fill the empty tank. The following are the steps involved in solving the above problem. Arrange them in sequential order.

$$\frac{11}{72} - \frac{5}{72} = \frac{6}{72} = \frac{1}{12}$$

The work done by 5 pipes in1 minute.

$$= \left(\frac{1}{12} + \frac{1}{24} + \frac{1}{36}\right) - \left(\frac{1}{18} + \frac{1}{72}\right)$$

$$\left(\frac{6+3+2}{72}\right)-\left(\frac{4+1}{72}\right)$$

The part of tank filled by A,B and C in 1 minute is 1/12,1/24 and 1/36 respectively.

The part of the tank emptied by D and E in 1 minute is 1/18 and 1/72 respectively.

A. DBCA

B. DCAB

C. BCAD

D. DBAC

Answer: A

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13. X,Y and Z can complete a job in 24 days, 32 days and 48 days respectively. They worked together and earned a total of ₹ x.Find the ratio of their shares.

A. $4:3:2$

B. $3:2:1$

C. $5:4:3$

D. $6:5:4$

Answer: A

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14. P and Q can complete a job in 6 days and 7 days respectively. They worked together and earned a total of ₹ 780. Find P's share in this amount (in₹).

A. 350

B. 490

C. 420

D. 560

Answer: C

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15. M and N can complete a job in 120 days and 180 days respectively. M started the job and after 60 days N joined M and they completed the remaining part of the job working together.In how many days was the job completed?

A. 88

B. 84

C. 96

D. 82

Answer: C

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16. B can do a job twice as fast as A and half as fast as C.A.B. and C together take 16 days to

complete it. In many days can C alone complete it ?

A. 25

B. 42

C. 35

D. 28

Answer: D

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17. Ten boys or twenty girls can complete a job in 10 days. In how many days can a boy and a girl complete it

A. 50

B. $58\frac{1}{3}$

C. $66\frac{2}{3}$

D. 70

Answer: C

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18. Murali and Sai can complete a job in 20 days and 30 days respectively. Two days after they start the job, Murali leaves and Sai completes the remining job. In how many days can Sai complete the remaining job ?

A. 20

B. 25

C. 15

D. 18

Answer: B

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19. Y can complete a job half as fast as X and twice as fast as Z,X,Y and Z takes 8 days to complete it. In how many days can Y alone complete it?

A. 21

B. 28

C. 35

D. 42

Answer: B

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20. Five men or ten women can complete a job in 20 days. In how many days can 3 men and 4 women complete it ?

A. 10

B. 15

C. 20

D. 25

Answer: C

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Concept Application Level 3

1. Pipe A can fill a tank in 12 hours and pipe B can empty the tank in 18 hours. Both pipes are opened at 6 a.m. and after some time pipe B is closed and the tank is full at 8 p.m. At what time was the pipe B closed ?

A. 10 a.m.

B. 8 a.m.

C. 9 a.m.

D. 11 a.m.

Answer: C

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2. A garrion had provisions for 1500 men for 30 days. After some days, 300 more men joined the garrison. The provisions lasted for a

total of 26 days from the beginning. After how many days did the new men join ?

A. 24

B. 6

C. 4

D. 26

Answer: B

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3. Two filling pipes P and Q are fitted to a tank. P is first opend for half the time taken by Q alone to fill the tank and then closed. Q is then opened for half the time taken by P alone to fill the tank.If the tank is full after a total of 6 hours after P was opened, for how many long was Q opened ? (in hours)

A. 5

B. 4

C. 3

D. 2

Answer: C

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4. A can do a piece of work in 18 days, B in36 days and C in 54 days. A starts the work and is joined by B after 1 day, C joins them after 4 more days. How many more days will be required to complete the work?

A. 11

B. 9

C. 8

D. 6

Answer: D

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5. In a fort, provisions are sufficient for 1600 soldiers for 30 days, if each soldier cnsumes at the rate of 2.5 kg per day. If 400 more soldiers join the fort and now each soldier consumes 3

kg per day, for how many days will the provisions last?

A. 15

B. 10

C. 20

D. 12

Answer: C

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6. In a fort, there are 1500 soldiers and they have provisions for 90 days.If 600 soldiers leave the fort and the remaining soldiers increase their consumption rate by 50%, for how many days will the provisions last ?

A. 80

B. 90

C. 100

D. 120

Answer: C

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7. P,Q and R can complete a job in 18 days,24 days and 36 days respectively. P started it and worked for 3 days. P then left Q then worked on it for 8 days. Q then left. R completed the remaining part of the job in 12 days. Find the time for which R worked (in days).

A. 12

B. 18

C. 4

D. 27

Answer: B

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