TIME & WORK

1. 'A' can complete a piece of work in 12 days 'A' and 'B' together can complete the same piece of work in 8 days. In how many days can 'B' alone complete the same piece of work?

A. 15 days
B. 18 days
C. 24 days
D. 28 days

2. A's 2 days work is equal to B's 3 days work. If A can complete the work in 8 days then to complete the work B will take:

A. 14 days
B. 12 days
C. 15 days
D. 16 days

3. 18 women can complete a work in 12 days and 12 men can complete the same work in 9 days. In how many days will 8 men and 8 women complete that work?

A. 9
B. 6
C. 12
D. 8

4. A, B and C together earn Rs. 300 per day, while A and C together earn Rs. 188 and B and C together earn Rs. 152. The daily earning of C is:

A. Rs. 40
B. Rs. 68
C. Rs. 112
D. Rs. 150

5. A can do a piece of work in 10 days and B can do the same piece of work in 20 days. They start the work together, but after 5 days A leaves. B will do the remaining piece of work in:

A. 6 days
B. 8 days
C. 5 days
D. 10 days

6. Ashokan is thrice as good a workman as Nitin and is therefore able to finish a piece of work in 40 days less than Nitin. Find the time in which they can do it working together.

A. 13 days
B. 7 days
C. 16 days
D. 15 days

7. A can complete a piece of work in 12 days. B is 60% more efficient than A. The number of days, that B will take to complete the same work is

A. 6
B. 7(1/2)
C. 8
D. 8(1/2)

8. A garrison of 6600 men had provisions for 64 days at the rate of 1700 g per head. At the end of 14 days, reinforcement arrives and it was found that the provision will last 34 days more at the rate of 1650 g per head. What is the strength of the reinforcement?

A. 3400
B. 6800
C. 3300
D. 3500

9. A can do a piece of work in 'x' days and B can do the same work 3x days. To finish the work together they take 12 days. What is the value of 'x'?

A. 8
B. 10
C. 12
D. 16

10. X can do a work in 16 days. In how many days will the work be completed by Y, if the efficiency of Y is 60% more than that of X?

A. 10 days
B. 12 days
C. 25 days
D. 30 days

11. 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

12. Tapsee and Pannu are great masons and they working alone can build a wall in 10 and 15 days respectively. Katappa is a labourer and he can demolish the same kind of wall in 4 days. If they all start working together, how many days will the wall be either built or demolished completely?

A. The wall will be built in 12 days.
B. The wall will be demolished in 12 days.
C. The wall will be built in 12/5 days.
D. The wall will be demolished in 12/5 days.

13. 12 boys, working 3 hours a day can complete a work in 20 days. How many hours a day must 18 boys work to complete the same work in 10 days?

A. 4 hrs
B. 18 hrs
C. 10 hrs
D. 12 hrs

14. If 9 engines consume 24 metric tons of coal, when each is working 8 hours a day, how much coal will be required for 8 engines, each running 13 hours a day, it being given that 3 engines of former type consume as much as 4 engines of latter type?

A. 23 metric tons
B. 24 metric tons
C. 25 metric tons
D. 26 metric tons

15. 4 men and 6 women complete a work in 8 days, 2 men and 9 women also complete in 8 days. The numbers of days 18 women complete the work:

A. 5(1/3) days
B. 5(2/3) days
C. 4(2/3) days
D. 4(1/3) days

16. Cost of 24 bats and 32 sticks is Rs. 5,600. What is the price of 3 bats and 4 sticks

A. Rs. 1,400
B. Rs. 2,800
C. Rs. 700

D. Data inadequate

17. If A can do 1/4 of a work in 3 days and B can do 1/6 of the same work in 4 days, how much will A get if both work together and are paid Rs.180 in all?

A. Rs. 60
B. Rs. 120
C. Rs. 90
D. Rs. 180

18. 10 men complete any work in 8 days and 16 women complete same work in 10 days. 8 women start the work and stop working after 4 days. How many men will complete the remaining work in 4 days?

A. 15 men
B. 20 men
C. 16 men
D. 12 men

19. 100 Men were employed to finish a work in 180 days. After 60 days it was found that only 1/5 of the work was done. How many more men must be employed to finish the work in the stipulated time?

A. 100
B. 200
C. 300
D. 150

20. A can do a piece of work in 24 days, B is 20% more efficient than A. If C can do the work in 10 more days than B, In how many days can A and C do the whole work together?

A. 25 days
B. (35/2) days
C. (40/3) days
D. 18 days

21. Two persons Aman and Bhanu can dig a pit in 20 days and 25 days respectively and a third person Cheenu can fill that pit in 50 days. All of the three persons start their work and after sometime Cheenu leaves the work. If total time taken to dig the pit from the beginning is 13 days, find after how many days Cheenu left his work?

A. 8.5 days
B. 7.5 days

C. 9.5 days
D. 8 days

22. A contractor decided to complete a work in 90 days. He employed 250 men at the beginning and another 150 men after 60 days and completed the work in stipulated time. Had he not employed the additional men, what percent more time he would have taken to finish the work?

A. 27%
B. 30%
C. 20%
D. 50%

23. It takes 6 workers a total of 10 hours to assemble a computer, with each working at the same rate. If six workers start at 9.00 am, and one worker per hour is added beginning at 3.00 pm, at what time will the computer assembled?

A. 5.00 pm
B. 5.30 pm
C. 6.00 pm
D. 7.00 pm

24. Three workers Trump, Putin and Jinping are appointed to do a job. They together started the job but Jinping left after 3 days when 37% of the job was done. The remaining job was completed by Trump and Putin in 7 days. The ratio of efficiency of

Trump and Putin is 4 : 5. Find the number of days required by the slowest worker to complete the entire job alone?

A. 22 days
B. 20 days
C. 24 days
D. 30 days

25. A group of men decided to do a job in 4 days, but 20 men dropped out everyday. Find the number of men who initially decided to do the job, if job was completed in 7 days?

A. 70
B. 110
C. 140
D. 120

1. C

Solution: To solve this question, we can apply a short trick approach;

If A and B together can do a piece of work in x day and A alone can do it in y days, then B alone can do the

Work in

xy/(y – x) days.

Given:

Time taken by A and B together to finish a piece of work = x = 8 days.

Time taken by A alone to finish the same piece of work = y = 12 days.

By the short trick approach:

B alone can do the whole work in

(8 × 12)/(12-8)

= 96/4 = 24 days

2. B

Solution: Men = m; Boys = b.

From the given information,

(2m + 4b) × 10 ≡ (4m + 5b) × 6

⇒ 20m + 40b ≡ 24m + 30b

⇒ 4m ≡ 10b

⇒ 2m ≡ 5b

∴ 5b = 2 × 40

⇒ 1b = (2 × 40)/5

= 16

∴ Required ratio = 40 : 16 = 5 : 2

3. A

Solution: 1 woman's 1 day's work =1 / (12 × 18) = 1 / 216

1 man's 1 day's work = 1 / (12 × 9) = 1 / 108

(8 men + 8 women)'s 1 day's work

= (8/108) + (8.216)

=(2/27) + (1/27)

=(3/27) = 1/9

∴ 8 men and 8 women will complete the work in 9 days

4. A

Solution: B's daily earning = Rs. (300 – 188) = Rs. 112.

A's daily earning = Rs. (300 – 152) = Rs. 148.

C's daily earning = Rs. [300 – (112 + 148)] = Rs. 40.

5. C

Solution: To solve this question, we can apply a short trick approach:

A can do a work in x days and B can do the same work in y days. If they work together for 'k' days and A goes away, then the number of days in which B finishes the y work is given by

y – (1 + y/x) k days.

A's time = x = 10 days

B's time = y = 20 days'

Work together time = k = 5 days

By the short trick approach we get,

= 20 – (1 + 20/10) × 5 days

= 20 – (1 + 2) × 5 days

= (20 – 15) days = 5 days

6. D

Solution: To solve this question, we can apply a short trick approach;

If A is 'n' times as fast (or slow) as B, and is therefore able to finish a work in 'D' days less (or more) than B, then the time in which they can do it working together is given by

(Dn / (n^2-1)) days

Given:

Ashokan's days less then Nitin = D = 40 days

Ashokan is 3 times as fast as Nitin = n = 3.

By the short trick approach:

we have the Required answer

= (40 × 3) / (3^2-1)

= (40 × 3) / 8 = 15 days

7. B

Solution: Kindly refer to the video for short-trick approach or go through the solution given below.

Ratio of their efficiency

= 100 : 160 = 5 : 8

∴ Ratio of time taken = 8 : 5

∴ Time taken by B

= 12 × (5/8)

= 15 / 2

= 7(1/2) days

8. A

Solution: The given problem takes the form as follows : 6600 men taking 1700 g per head have provision for (64 – 14) = 50 days how many men taking 1650 g per head have provision for 34 days ? Less provision per head, More men (Indirect) Less days, More men (Indirect)

Provision 1650 : 1700 } : : 6600 : x

Days 18 : 24 }

∴ 1650 × 34 × x = 1700 × 50 × 6600

∴ x = (1700 × 50 × 6600) / (1650 ×34) = 10000

∴ Strength of reinforcement = 10000 – 6600 = 3400

9. D

Solution:

A's 1 day's work = 1/x

B's 1 day's work = 1/3x

A's and B's 1 day's work = (1/x) + (1/3x) = 4 / 3x

From the given information, we get ⇒ 4/3x = 1/12

⇒ x = 16.

10. A

Solution: Y's 1 day's work

= X's one day's work × (100 + a) / 100

Where a is the percentage increase in efficiency.

X's 1 day's work = 1/16

= (1/16) × (100 + 60)/100

= 160 / (16 × 100)

= 1 / 10

Y alone finish the work in 10 days.

11. B

Solution: $M_1D_1T_1 = M_2D_2T_2$

⇒ 15 × 20 × 8 = 20 × 12 × T_2

⇒ T2 = (15 × 20 × 8) / (20 × 12)

= 10 hours

12. B

Solution: As per the given information, individual efficiency of both Tapsee and Pannu has to be positive and

that of Katappa negative.

Therefore, work done by all working together

= 1/10 + 1/15 – 1/4

= 1/12

Clearly, the wall will be demolished in 12 days.

13. A

Solution: Let the required number of hours per day be z. Then,

More boys, Less hours per day (Indirect proportion)

Less days, More hours per day (Indirect proportion)

Boys 18 : 12 }
Days 10 : 20 } :: 3 : z

z = (12 x 20 x 3) / (18 x 10) = 4hrs.

14. D

Solution: To solve this question, we can apply a short trick approach;

If M1 persons can do W1 work in H1 hours and M2 persons can do W2 work in H2 hours ,

$M_1T_1W_1 = M_2T_2W_1$

Given:

∵ 4 engines latter type = 3 engines former type

∴ 8 engines latter type = 6 engines former type

M1 = 9, H1 = 8 hours/day, W1 = 24 m tons

M2 = 8, H2 = 13 hours/day, W2 = x m tons

Now, as M1H1W2 = M2H2W1

⇒ 9 × 8 × x = 6 × 13 × 24

⇒ x = (6 × 13 × 24) / (9 × 8)

⇒ x = 26 m tons.

15. A

Solution: 4 m + 6 w ≡ 2 m + 9 w

$2m \equiv 3w$

So, $4m + 6w \equiv 12w$

$12w \rightarrow 8$ days

$18w \rightarrow x$ days

By cross multiplication, we get

$\therefore x = (12 \times 8) / 18$

$= 1/36$

$= 5(1/3)$days

16. C

Solution: C.P. of 1 bat and 1 stick is x and y respectively

$\therefore 24x + 32y = 5600$

Dividing both sides by 8, we have

$3x + 4y = 700$.

17. B

Solution: A's one day work $= 1/4 \times 1/3 = 1/12$

B's one day work $= 1/6 \times 1/4 = 1/24$

A's wages: B's wages = A's 1 day's work : B's 1 day's work

$= (1/12):(1/24) = 2:1$

$\Rightarrow$ A's share $= (2/3) \times 180 =$ Rs.120

18. C

Solution: According to the question,

$10m \times 8 = 16w \times 10$

$1m = 2w$

8 women = 4 men

Let x men complete the remaining work in 4 days.

$10 \times 8 = (4 \times 4) + (4 \times x)$

80 = 16 + 4x

4x = 64

x = 16 men

19. A

Solution: By product constancy

(M1 × D1) / W1 = (M2 × D2) / W2

(100 × 60) / (1 / 5) = (a × 60) / (1-(1/5)

⇒ a = 200

⇒ Total workers = 200

⇒ Extra men required = 200 – 100 = 100

20. C

Solution: Ratio of the efficiency of A and B = 100 : 120 = 5 : 6

Ratio between the time taken by A and B = (1/5) : (1/6)

= 6 : 5

If A can do the work in 24 days then B can do the same work in

(24/6) × 5 = 20 days

C can do the same work in 20 + 10 = 30 days.

A and C together can do the same work = 1(1/24 + 1/30)

= 1/((5+4)/120)

= 1/(9/120) = 40/3 days

21. A

Solution: Let total work is LCM of 20, 25 and 50 days = 100 units

1 day work of Aman , Bhanu and Cheenu is 5 units, 4 units and 2 units. But the nature of work of Cheenu is

opposite to that of Aman and Bhanu.

Let Cheenu work for 'x' days and remaining days in which only Aman and Bhanu work is (13 – x) days.

According to question-

⇒ x × (5 + 4 – 2) + (13 – x) × (5 + 4) = 100

⇒ x = 8.5 days

Hence Cheenu left the work after 8.5 days.

22. C

Solution: Let 250 men alone can complete the work in x days

According to the question

250 × 60 + (250 + 150) × (90 – 60) = 250 × x

⇒ 15000 + 12000 = 250 × x

⇒ x = 27000/250 = 108 days

Reqd. percentage = ((108 – 90) / 90) × 100 = 20%

23. C

Solution: 6 workers complete some work in 10 hours.

∴ 1 worker completes the same work in 60 hours.

Let the total work be equivalent to 60 man-hours.

From 9.00 am to 3.00 pm, all 6 workers work together for 6 hours.

∴ Amount of work done by 6 workers in 6 hours is 6 × 6 = 36 man-hours

From 3.00 pm to 4.00 pm, 7 man-hours of work will be done.

From 4.00 pm to 5.00 pm, 8 man-hours of work will be done.

From 5.00 pm to 6.00 pm, 9 man-hours of work will be done.

Thus, total amount of work done up to 6.00 pm is 36 + 7 + 8 + 9 = 60 man-hours

Thus, the computer will be assembled at 6.00 pm.

24. D

Solution: Let x, y and z are the one day's work of Trump, Putin and Jinping respectively.

According to the question,

⇒ 3 × (x + y + z) = 37% of the work

⇒ 7 × (x + y) = 63%

⇒ x + y = 9%

∵ The ratio of efficiency of Trump and Putin is 4 : 5,

∴ 5x = 4y and x = 4%, y = 5% work per day.

It implies Trump can complete the job and in 25 days and Putin in 20 days.

In 3 days (x + y + z) do 37% of the work

Out of this Trump and Putin would do 27% work = (3 × 9%) of the work.

Remaining work = 37% – 27% = 10% (done by Jinping in 3 days)

∴ The work of z = 10/3 = 3.33% work per day

∴ Jinping is the slowest and he would do the work in 30 days

25. C

Solution: Let the initial number of men be m

Total work = 4 m

m + (m – 20) + (m – 40) + …… = 4 m

7/2 * [2m + 6 (–20)] = 4m

7/2 * (2m – 120) = 4m

m =140