



Date : 29th Dec 2023

Quantitative Aptitude - Time and Work

English

**Q:1** If 30 men can build a wall in 35 days, then how many men are required to make the wall in 21 days?

1. 40
2. 50
3. 45
4. 55

**Q:2** A, B, and C together can build a wall in 18 days. C is three times as efficient as B, and A alone can build a wall in 54 days. In how many days can A and B together build the wall?

1. 53 days
2. 46 days
3. 42 days
4. 36 days

**Q:3** Ram and Mohan together can build a wall in 12 days. Mohan and Vansh can build the same wall in 16 days and Vansh and Ram can build the same wall in 24 days. In how many days can all three can complete the wall while working together?

1. 111/13 days
2. 156/23 days
3. 96/9 days
4. 105/8 days

**Q:4** Avinash can type at a speed of 72 words/min and Bhagat can type at speed of 53 words/min. They have to write a book of 500 pages and each page will have an average of 200 words. What is the minimum time required to complete the work if they both work together?

1. 14 hour 40 minutes
2. 13 hour 20 minutes
3. 13 hour
4. 12 hours 30 minutes

**Q:5** The work done by 8 men working 2 hours a day is equal to 4 women working 3 hours a day, which is also equal to 6 children working 4 hours a day. How many hours does it take when the same work is done by a man, a woman, and a child together?

1. 3.33 hours
2. 8.33 hours

3. 4.33 hours

4. 5.33 hours

**Q:6** A can build a wall in 6 hours. However, his enemy B interrupts his work and destroys the wall simultaneously until it is completed, due to which A could complete the wall in 9 hours. Once the wall gets built, B comes again and destroys the wall completely in x hours. Find x.

1. 15 hours
2. 18 hours
3. 12 hours
4. 9 hours

**Q:7** A alone can finish the work in 12 days and B can finish the same work alone in 15 days. If they together work for six days and the total amount paid to them is Rs.2250, then find the share of B.

1. Rs.1750
2. Rs.1500
3. Rs.1000
4. Rs.1250

**Q:8** If the efficiency of Raghav in doing a work is 2.5 times that of Raj. Both of them together take 10 days to complete a work. Find the time taken by Raj alone.

1. 14 Days
2. 35 Days
3. 10 Days
4. 7 Days

**Q:9** A man can complete a task in 25 days. His father takes 30 days, and his son finishes it in 35 days. How long will it take to complete the work if they all work together?

1. approximately 6.7 days
2. approximately 7.8 days
3. approximately 8.4 days
4. approximately 9.8 days

**Q:10** Aryan and Harshita are working on a college project. Aryan can complete the project in 16 days while Harshita can complete the project in 10. If they work together then, find in how many days they will complete the project.

1.  $5\frac{5}{13}$



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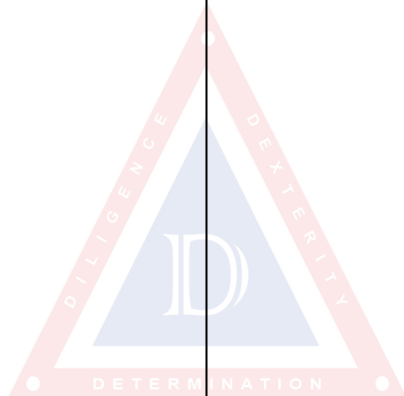
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2.  $5\frac{3}{13}$

3.  $6\frac{2}{13}$

4.  $5\frac{2}{13}$





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### Answer Key

1. (2)	2. (4)	3. (3)	4. (2)	5. (4)
6. (2)	7. (3)	8. (2)	9. (4)	10. (3)

### Answers and Solutions

**Q:1** The correct answer is **option 2** i.e. **50**.

We have given in the question that 30 men can build a wall in 35 days.

Total work = Total man  $\times$  Total days

Total work =  $30 \times 35 = 1050$

The number of men required to complete the work in 21 days =  $1050/21 = 50$  men

**Q:2** The correct answer is **Option 4** i.e. **36 days**.

A, B, and C can build a wall in 18 days.

C is 3 times as efficient as B and A alone can build that wall in 54 days

Total work done in building the wall = LCM of 18 and 54 = 54 units

A alone can build the wall in = 54 days

A's per day work =  $54/54 = 1$  unit

A, B and C per day work =  $54/18 = 3$  units

B and C per day work =  $3 - 1 = 2$  units

Let B per day work be  $x$  unit and C per day work be  $3x$  unit

ATQ -

$3x + x = 2$  units

$4x = 2$

$x = 1/2$  unit

B's per day work =  $x = 1/2$  unit

A and B per day work =  $1 + (1/2) = 3/2$  units

Total days taken by A and B to finish the work =  $54/(3/2) = (54/3) \times 2 = 36$  days

**Q:3** The correct answer is **Option 3** i.e. **96/9 days**.

Let Ram, Mohan, and Vansh's one-day work be R, M, and V respectively.

Wall can be built by Ram and Mohan in = 12 days

Work done by Ram and Mohan in a day =  $1/12$

$R + M = 1/12 \dots (1)$

Wall can be built by Mohan and Vansh in = 16 days

Work done by Mohan and Vansh in a day =  $1/16$

$M + V = 1/16 \dots (2)$

Wall can be built by Ram and Vansh in = 24 days

Work done by Ram and Vansh in a day =  $1/24$

$R + V = 1/24 \dots (3)$

Adding eq (1), (2) and (3)

$\Rightarrow 2(R + M + V) = 1/12 + 1/16 + 1/24$

$\Rightarrow 2(R + M + V) = (4 + 3 + 2)/48$

$\Rightarrow (R + M + V) = 9/96$

Together they can complete the wall =  $96/9$  days

**Q:4** The correct answer is **option 2** i.e. **13 hours 20 minutes**.

Total words to be typed =  $500 \times 200$

$\Rightarrow 1,00,000$  words

Together, they type words in a minute =  $72 + 53$

$\Rightarrow 125$  words

Total time =  $1,00,000/125$

$\Rightarrow 800$  minutes or 13 hours 20 minutes

**Q:5** The correct answer is **option 4** i.e. **5.33 hours**.

Suppose a man is doing 'm' units/hour, a woman is doing 'w' units/hour and a child is doing 'c' units/hour

According to the question,

$8 \times m \times 2 = 4 \times w \times 3 = 6 \times c \times 4$

Thus, the ratio of the work done by a man, woman, and child =  $3 : 4 : 2$  respectively.

Let the work done by man = 3 units/day

Let the work done by women = 4 units/day

Let the work done by the child = 2 units/day

So total work done =  $8 \times 3 \times 2 = 48$  units

Thus, if the same work is done by a man, a woman and a child then the total time taken =  $48/(3 + 4 + 2) = 48/9 = 5.33$  hours

**Q:6** The correct answer is **Option 2** i.e. **18 hours**.

Time taken by A to build a wall = 6 hours

Time taken by A to build a wall when B destroys the wall simultaneously = 9 hours

Total work done to build the wall = LCM of 6 and 9 = 18 units

Efficiency of A = 3 units

Efficiency of A - B (as B destroyed the wall) = 2 units

$3 - B = 2$

$B = 1$

Destroying Efficiency of B = 1 units

Now B destroys the wall in

$\Rightarrow x = 18/1 = 18$  hours



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**Q:7** The correct answer is **Option 3** i.e. **Rs.1000**.

Number of days taken by A to complete the work  
= 12

Number of days taken by B to complete the work =  
15

Work complete in 1 day =  $1/12 + 1/15$

$\Rightarrow (5 + 4)/60 = 9/60$

Share of work done by B =  $4/60$

Ratio =  $(4/60)/(9/60) \times 2250 = \text{Rs.1000}$

**Q:8** The correct answer is **option 2** i.e. **35 Days**.

**Concept used:**

Work done = time  $\times$  efficiency

**Calculations:**

Relation of the efficiency of raghav and raj;

$\Rightarrow \text{Raghav} : \text{Raj} = 2.5 : 1$  or  $5 : 2$

Let the efficiency of raghav and raj be  $5x$  and  $2x$

Total work done =  $(5x + 2x) \times 10 = 70x$

Time taken by Raj =  $70x/2x = 35$  Days

**Q:9** The correct answer is **option 4** i.e.  
**approximately 9.8 days**.

A man can complete a task = 25 days

His father can complete a task = 30 days

His son can complete a task = 35 days

1 day's work of the three persons =  $(1/25 + 1/30 + 1/35) = 107/1050$

So, all three together will complete the work in  
 $(1050/107) = 9.8$  days

**Q:10** The correct answer is **Option 3** i.e.  $6\frac{2}{13}$ .

Aryan can complete the project in 16 days and,

Harshita can complete the project in 10 days

L.C.M(16 and 10) = 80

The efficiency of Aryan =  $80/16 = 5$  units

The efficiency of Harshita =  $80/10 = 8$  units

Time taken if they worked together =  $80/13 = 6\frac{2}{13}$