



Prime CAT 01 2022 DILR

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Section-1

Sec 1

Directions for questions 1 to 6: Answer the questions on the basis of the information given below.

Hockey teams from twelve nations – N1, N2, N3, ..., N12 participated in the recent Olympic Games. The teams were divided into two groups A and B of six nations each. N1 to N6 were in group A and N7 to N12 were in group B. The competition consisted of two stages; a group stage followed by a knockout stage. In group stage, each team initially played once with each team within their group. Following the completion of group stage, in knockout stage the top four teams from each group advanced to the quarter-finals. The four quarter-final winners played the semi-finals. The two semi-final winners met for the gold medal match, the winner got the gold medal and loser got the silver medal, while the semi-final losers played in the bronze medal match and the winner of this match got the bronze medal. Three points were awarded for a win, 1 for a draw and 0 for a loss. Knockout matches decided in regular time count as wins and losses, while matches decided by penalty shoot-outs count as draws. Penalty shoot-outs is a method used to decide which team will advance (or win the game) to the next stage following a tie game.

The table given below shows the quarter-finals played between two teams.

	Group A	Group B
1st Quarter-final	Top scorer team	Lowest scorer team
2nd Quarter-final	Lowest scorer team	Top scorer team
3rd Quarter-final	Second top scorer team	Second lowest scorer team
4th Quarter-final	Second lowest scorer team	Second top scorer team

The 1st semi-final match was played between the winners of the 1st and 4th quarter finals. The second semi-final was played between the other two teams.

The table given below shows partial information on points awarded to hockey teams in the Olympic Games.

Team	Points in group stage matches	Final points
N1	13	
N2	12	
N3	7	7
N4		5
N5		4
N6		
N7	13	
N8	9	
N9	8	8
N10		8
N11		4
N12		

The following facts are also known.

(i) The total number of final points awarded to hockey teams in the Olympic Games was 106.

(ii) Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.1 [11831809]

How many hockey matches were played in the Olympic Games?

Solution:

Correct Answer : 38

[Answer key/Solution](#)

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	13	5	4	1	0	
	N8	9	5	3	0	2	
	N9	8	5	2	2	1	
	N10	7	5	2	1	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	

Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively.

From condition (ii), N1 won the 1st quarter-final.

N7, N2 and N8 won the 2nd, 3rd and 4th quarter-finals respectively. So after quarter-finals the total points of N1, N7, N2 and N8 were 14, 16, 15 and 12 respectively.

So N1 & N8 and N7 & N2 were played the 1st and 2nd semi-finals respectively.

From condition (i) and (iii), N1 and N7 won the 1st and 2nd semi-finals respectively. These teams played the final for a draw.

Therefore, final points of N1 and N7 were 18 and 20 respectively. Also, final points of N8 were 12.

Hence, the semi-final losers N2 and N8 played in the bronze medal match and N2 got the bronze medal.

The final points awarded to teams in Olympic Games can be shown as:

	Team	Final points	Played	Win	Draw	Loss	
Group A	N1	18	8	5	3	0	Played in final
	N2	18	8	6	0	2	Bronze Medal
	N3	7	6	2	1	3	Eliminated in quarter-finals
	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

Total number of matches played = $2 \times {}^6C_2 + 4 + 2 + 1 + 1 = 2 \times 15 + 8 = 38$.

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Directions for questions 1 to 6: Answer the questions on the basis of the information given below.

Hockey teams from twelve nations – N1, N2, N3, ..., N12 participated in the recent Olympic Games. The teams were divided into two groups A and B of six nations each. N1 to N6 were in group A and N7 to N12 were in group B. The competition consisted of two stages; a group stage followed by a knockout stage. In group stage, each team initially played once with each team within their group. Following the completion of group stage, in knockout stage the top four teams from each group advanced to the quarter-finals. The four quarter-final winners played the semi-finals. The two semi-final winners met for the gold medal match, the winner got the gold medal and loser got the silver medal, while the semi-final losers played in the bronze medal match and the winner of this match got the bronze medal. Three points were awarded for a win, 1 for a draw and 0 for a loss. Knockout matches decided in regular time count as wins and losses, while matches decided by penalty shoot-outs count as draws. Penalty shoot-outs is a method used to decide which team will advance (or win the game) to the next stage following a tie game.

The table given below shows the quarter-finals played between two teams.

	Group A	Group B
1st Quarter-final	Top scorer team	Lowest scorer team
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The 1st semi-final match was played between the winners of the 1st and 4th quarter finals. The second semi-final was played between the other two teams.

The table given below shows partial information on points awarded to hockey teams in the Olympic Games.

Team	Points in group stage matches	Final points
N1	13	
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N5		4
N6		
N7	13	
N8	9	
N9	8	8
N10		8
N11		4
N12		

The following facts are also known.

- The total number of final points awarded to hockey teams in the Olympic Games was 106.
- Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.2 [11831809]

How many hockey matches were drawn in the Olympic Games?

Solution:

Correct Answer : 8

 Answer key/Solution

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	13	5	4	1	0	
	N8	9	5	3	0	2	
	N9	8	5	2	2	1	
	N10	7	5	2	1	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	

Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively. From condition (ii), N1 won the 1st quarter-final.

N7, N2 and N8 won the 2nd, 3rd and 4th quarter-finals respectively. So after quarter-finals the total points of N1, N7, N2 and N8 were 14, 16, 15 and 12 respectively.

So N1 & N8 and N7 & N2 were played the 1st and 2nd semi-finals respectively.

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	N3	7	6	2	1	3	Eliminated in quarter-finals
	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

Let the number of matches drawn be n .

Then, $(38 - n) \times 3 + n \times 2 = 106$ (From condition (i))

$\Rightarrow 114 - 3n + 2n = 106 \Rightarrow n = 8$.

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N6		
N7	13	
N8	9	
N9	8	8
N10		8
N11		4
N12		

The following facts are also known.

- (i) The total number of final points awarded to hockey teams in the Olympic Games was 106.
- (ii) Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.3 [11831809]

Which of the following hockey teams were eliminated in quarter-finals?

1 ☐ N4, N5, N10, N11

2 ☐ N2, N4, N8, N10

3 ☐ N3, N5, N9, N11

4 ☐ N3, N4, N9, N10

Solution:

Correct Answer : 4

[Answer key/Solution](#)

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	13	5	4	1	0	
	N8	9	5	3	0	2	
	N9	8	5	2	2	1	
	N10	7	5	2	1	2	
	N11	4	5	1	1	3	Eliminated in group stage
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Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively.

From condition (ii), N1 won the 1st quarter-final.

N7, N2 and N8 won the 2nd, 3rd and 4th quarter-finals respectively. So after quarter-finals the total points of N1, N7, N2 and N8 were 14, 16, 15 and 12 respectively.

So N1 & N8 and N7 & N2 were played the 1st and 2nd semi-finals respectively.

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Hence, the semi-final losers N2 and N8 played in the bronze medal match and N2 got the bronze medal.

The final points awarded to teams in Olympic Games can be shown as:

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	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

The hockey teams eliminated in quarter-finals were N3, N4, N9, N10. These teams played 6-6 matches.

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Hockey teams from twelve nations – N1, N2, N3, ..., N12 participated in the recent Olympic Games. The teams were divided into two groups A and B of six nations each. N1 to N6 were in group A and N7 to N12 were in group B. The competition consisted of two stages; a group stage followed by a knockout stage. In group stage, each team initially played once with each team within their group. Following the completion of group stage, in knockout stage the top four teams from each group advanced to the quarter-finals. The four quarter-final winners played the semi-finals. The two semi-final winners met for the gold medal match, the winner got the gold medal and loser got the silver medal, while the semi-final losers played in the bronze medal match and the winner of this match got the bronze medal. Three points were awarded for a win, 1 for a draw and 0 for a loss. Knockout matches decided in regular time count as wins and losses, while matches decided by penalty shoot-outs count as draws. Penalty shoot-outs is a method used to decide which team will advance (or win the game) to the next stage following a tie game.

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	Group A	Group B
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4th Quarter-final	Second lowest scorer team	Second top scorer team

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N4		5
N5		4
N6		
N7	13	
N8	9	
N9	8	8
N10		8
N11		4
N12		

The following facts are also known.

- The total number of final points awarded to hockey teams in the Olympic Games was 106.
- Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.4 [11831809]

The first semi-final match was played between which of the following two teams?

1 ☐ N1 and N8

2 ☐ N2 and N7

3 ☐ N1 and N2

4 ☐ N2 and N8

Solution:

Correct Answer : 1

[Answer key/Solution](#)

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	13	5	4	1	0	
	N8	9	5	3	0	2	
	N9	8	5	2	2	1	
	N10	7	5	2	1	2	
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Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively.

From condition (ii), N1 won the 1st quarter-final.

N7, N2 and N8 won the 2nd, 3rd and 4th quarter-finals respectively. So after quarter-finals the total points of N1, N7, N2 and N8 were 14, 16, 15 and 12 respectively.

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The final points awarded to teams in Olympic Games can be shown as:

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	N2	18	8	6	0	2	Bronze Medal
	N3	7	6	2	1	3	Eliminated in quarter-finals
	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

The 1st semi-final match was played between N1 and N8.

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The following facts are also known.

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- Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.5 [11831809]

Which of the following hockey teams won the bronze medal?

1 ☐ N1

2 ☐ N2

3 ☐ N7

4 ☐ N8

Solution:

Correct Answer : 2

 Answer key/Solution

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
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Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively.

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	N3	7	6	2	1	3	Eliminated in quarter-finals
	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

Team N2 won the bronze medal.

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Directions for questions 1 to 6: Answer the questions on the basis of the information given below.

Hockey teams from twelve nations – N1, N2, N3, ..., N12 participated in the recent Olympic Games. The teams were divided into two groups A and B of six nations each. N1 to N6 were in group A and N7 to N12 were in group B. The competition consisted of two stages; a group stage followed by a knockout stage. In group stage, each team initially played once with each team within their group. Following the completion of group stage, in knockout stage the top four teams from each group advanced to the quarter-finals. The four quarter-final winners played the semi-finals. The two semi-final winners met for the gold medal match, the winner got the gold medal and loser got the silver medal, while the semi-final losers played in the bronze medal match and the winner of this match got the bronze medal. Three points were awarded for a win, 1 for a draw and 0 for a loss. Knockout matches decided in regular time count as wins and losses, while matches decided by penalty shoot-outs count as draws. Penalty shoot-outs is a method used to decide which team will advance (or win the game) to the next stage following a tie game.

The table given below shows the quarter-finals played between two teams.

	Group A	Group B
1st Quarter-final	Top scorer team	Lowest scorer team
2nd Quarter-final	Lowest scorer team	Top scorer team
3rd Quarter-final	Second top scorer team	Second lowest scorer team
4th Quarter-final	Second lowest scorer team	Second top scorer team

The 1st semi-final match was played between the winners of the 1st and 4th quarter finals. The second semi-final was played between the other two teams.

The table given below shows partial information on points awarded to hockey teams in the Olympic Games.

Team	Points in group stage matches	Final points
N1	13	
N2	12	
N3	7	7
N4		5
N5		4
N6		
N7	13	
N8	9	
N9	8	8
N10		8
N11		4
N12		

The following facts are also known.

- The total number of final points awarded to hockey teams in the Olympic Games was 106.
- Out of 4 quarter-finals, only the 1st quarter-final match was decided by penalty shoot-outs and the group A team advanced to the semi-finals.

(iii) The difference between the final points of N1 and N8 was 6. The final was not played between teams from the same group.

Q.6 [11831809]

Which of the following teams had played the maximum number of drawn matches?

1 ☐ N4

2 ☐ N10

3 ☐ N1

4 ☐ N7

Solution:

Correct Answer : 3

 Answer key/Solution

Step 1:

From the given information, points awarded to teams in group stage matches can be shown as:

	Team	Points in group stage matches	Played	Win	Draw	Loss	
Group A	N1	13	5	4	1	0	
	N2	12	5	4	0	1	
	N3	7	5	2	1	2	
	N4	5	5	1	2	2	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	13	5	4	1	0	
	N8	9	5	3	0	2	
	N9	8	5	2	2	1	
	N10	7	5	2	1	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	

Step 2:

The 1st, 2nd, 3rd and 4th quarter-finals were played between N1 & N10, N7 & N4, N2 & N9 and N8 & N3 respectively.

From condition (ii), N1 won the 1st quarter-final.

N7, N2 and N8 won the 2nd, 3rd and 4th quarter-finals respectively. So after quarter-finals the total points of N1, N7, N2 and N8 were 14, 16, 15 and 12 respectively.

So N1 & N8 and N7 & N2 were played the 1st and 2nd semi-finals respectively.

From condition (i) and (iii), N1 and N7 won the 1st and 2nd semi-finals respectively. These teams played the final for a draw.

Therefore, final points of N1 and N7 were 18 and 20 respectively. Also, final points of N8 were 12.

Hence, the semi-final losers N2 and N8 played in the bronze medal match and N2 got the bronze medal.

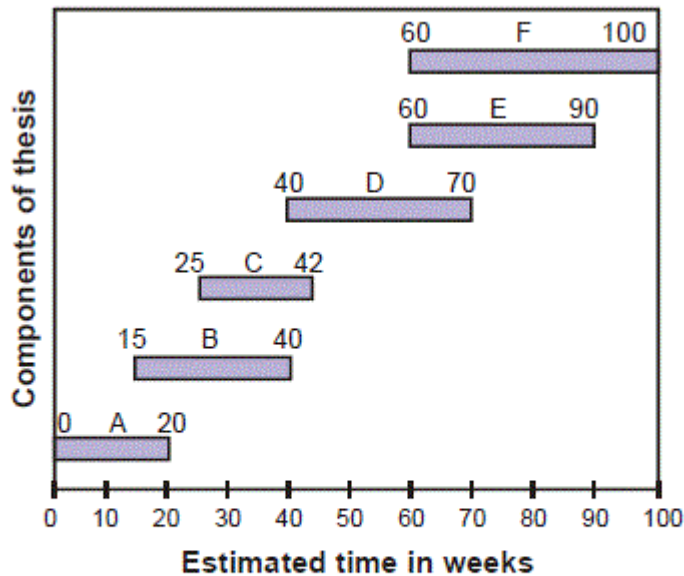
The final points awarded to teams in Olympic Games can be shown as:

	Team	Final points	Played	Win	Draw	Loss	
Group A	N1	18	8	5	3	0	Played in final
	N2	18	8	6	0	2	Bronze Medal
	N3	7	6	2	1	3	Eliminated in quarter-finals
	N4	5	6	1	2	3	
	N5	4	5	1	1	3	Eliminated in group stage
	N6	1	5	0	1	4	
Group B	N7	20	8	6	2	0	Played in final
	N8	12	8	4	0	4	4th Position
	N9	8	6	2	2	2	Eliminated in quarter-finals
	N10	8	6	2	2	2	
	N11	4	5	1	1	3	Eliminated in group stage
	N12	1	5	0	1	4	
	Total	106					

Team N1 played the maximum draw matches i.e., 3.

Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Kamal completed his Ph.D. thesis in 100 weeks. There are six components of a thesis: A, B, C, D, E and F. Each component has to be carefully designed and verified. The bar chart in the following figure shows the Estimated duration of each of the component done by Kamal in an order. During the review of the thesis, the Actual Duration of each component, as a percentage of the Estimated Duration is shown in the following table.



Component	A	B	C	D	E	F
Actual Duration (as a percentage of the Estimated Duration)	100	100	100	70	60	80

Q.7 [11831809]

If Kamal would have worked on any two of the components together at a time, then in minimum how many weeks he could have complete the thesis?

Solution:

Correct Answer : 67

Your Answer : 78

 Answer key/Solution

Calculate the actual duration of components.

$$\frac{\text{Actual duration of A}}{\text{Estimated duration of A}} \times 100 = 100$$

$$\text{Actual duration of A} = \frac{100}{100} \times 20 = 20.$$

Similarly, calculate for all other components and get the following table:

Component	Estimated duration	Actual duration
A	20	20
B	25	25
C	17	17
D	30	21
E	30	18
F	40	32

Total actual duration = $20 + 25 + 17 + 21 + 18 + 32 = 133$

Mid value of 133 = 66.5

If Kamal does components with actual duration (20, 21, 25) with components with actual duration (17, 18, 32)

$$(20 + 21 + 25) - (17 + 18 + 32) = -1$$

$$\therefore 20 + 21 + 25 + 1 = 67 \text{ weeks}$$

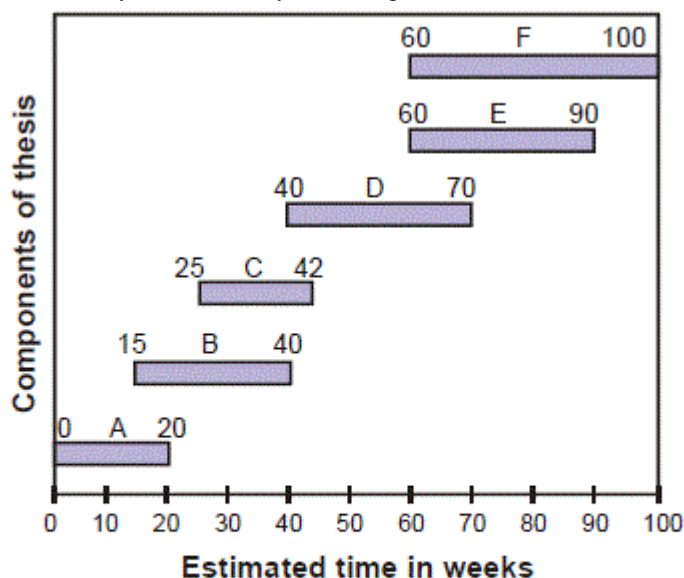
In 67 weeks he could have completed the thesis.

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Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Kamal completed his Ph.D. thesis in 100 weeks. There are six components of a thesis: A, B, C, D, E and F. Each component has to be carefully designed and verified. The bar chart in the following figure shows the Estimated duration of each of the component done by Kamal in an order. During the review of the thesis, the Actual Duration of each component, as a percentage of the Estimated Duration is shown in the following table.



Component	A	B	C	D	E	F
Actual Duration (as a percentage of the Estimated Duration)	100	100	100	70	60	80

Q.8 [11831809]

In which of the following pairs of components is the ratio of the Actual Duration to the Estimated Duration, the minimum?

1 ☐ A and B

2 ☐ B and C

3 ☐ C and D

4 ☐ E and F



Solution:

Correct Answer : 4

Your Answer : 4

Calculate the actual duration of components.

$$\frac{\text{Actual duration of A}}{\text{Estimated duration of A}} \times 100 = 100$$

$$\text{Actual duration of A} = \frac{100}{100} \times 20 = 20.$$

Similarly, calculate for all other components and get the following table:

Component	Estimated duration	Actual duration
A	20	20
B	25	25
C	17	17
D	30	21
E	30	18
F	40	32

Ratio for A and B = $45/45 = 1$

Ratio for B and C = $42/42 = 1$

Ratio for C and D = $38/47 = 0.81$

Ratio for E and F = $50/70 = 0.71$

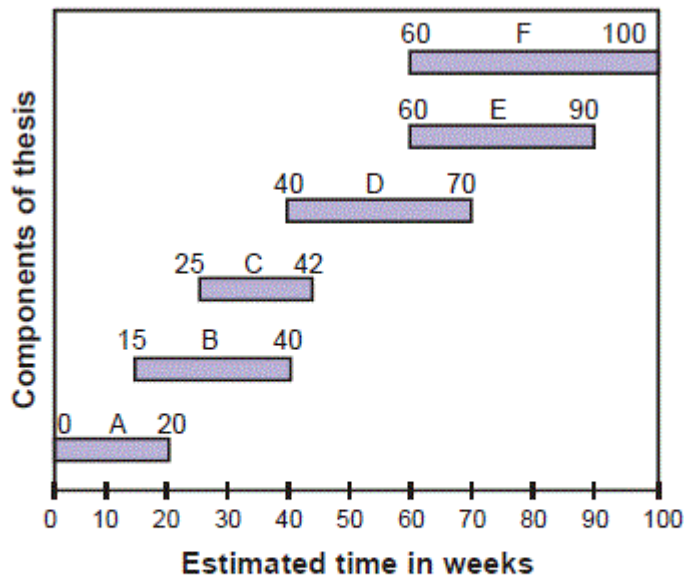
Hence, the answer is option (4).

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Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

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Component	A	B	C	D	E	F
Actual Duration (as a percentage of the Estimated Duration)	100	100	100	70	60	80

Q.9 [11831809]

In how many components is the difference between the Actual Duration of a component and that of its immediate predecessor not more than 6 weeks?



Solution:

Correct Answer : 3

Your Answer : 3

Calculate the actual duration of components.

$$\frac{\text{Actual duration of A}}{\text{Estimated duration of A}} \times 100 = 100$$

$$\text{Actual duration of A} = \frac{100}{100} \times 20 = 20.$$

Similarly, calculate for all other components and get the following table:

Component	Estimated duration	Actual duration
A	20	20
B	25	25
C	17	17
D	30	21
E	30	18
F	40	32

From the table the difference of actual duration of a subproject and that of its immediate predecessor is as follows:

$$B - A = 25 - 20 = 5$$

$$C - B = 25 - 17 = 8$$

$$D - C = 21 - 17 = 4$$

$$E - D = 21 - 18 = 3$$

$$F - E = 32 - 18 = 14.$$

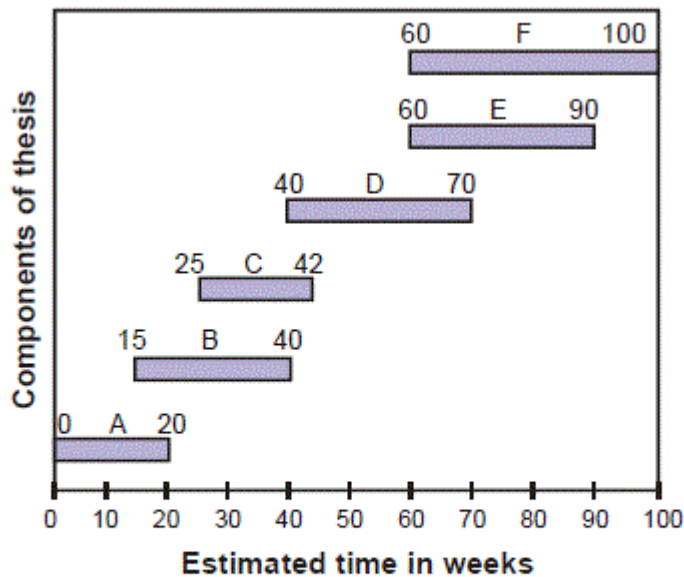
Hence, the answer is 3.

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Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Kamal completed his Ph.D. thesis in 100 weeks. There are six components of a thesis: A, B, C, D, E and F. Each component has to be carefully designed and verified. The bar chart in the following figure shows the Estimated duration of each of the component done by Kamal in an order. During the review of the thesis, the Actual Duration of each component, as a percentage of the Estimated Duration is shown in the following table.



Component	A	B	C	D	E	F
Actual Duration (as a percentage of the Estimated Duration)	100	100	100	70	60	80

Q.10 [11831809]

What is the ratio of the actual time taken by the largest component to that of its immediate predecessor?

1 ☐ $(4/3)^2$

2 ☐ $(2/3)^2$

3 ☐ $(3/4)^2$

4 ☐ $(3/2)^2$



Solution:

Correct Answer : 1

Your Answer : 1

Calculate the actual duration of components.

$$\frac{\text{Actual duration of A}}{\text{Estimated duration of A}} \times 100 = 100$$

$$\text{Actual duration of A} = \frac{100}{100} \times 20 = 20.$$

Similarly, calculate for all other components and get the following table:

Component	Estimated duration	Actual duration
A	20	20
B	25	25
C	17	17
D	30	21
E	30	18
F	40	32

Conclusion is the component with largest duration.

$$\text{Ratio} = 32/18 = (4/3)^2.$$

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Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

The following facts are also known.

- (i) Mathematics teacher F from Noida took only one class. It was scheduled on Sunday.
- (ii) A was a Chemistry teacher and did not take a class on Sunday.
- (iii) No Physics teacher was from Noida and no Chemistry teacher was either from Delhi or Gurgaon.
- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.11 [11831809]

What was the total number of classes scheduled for A, E and G in the week?



Solution:

Correct Answer : 7

Your Answer : 7

[Answer key/Solution](#)

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

The total number of classes scheduled for A, E and G = $2 + 2 + 3 = 7$.

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Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

The following facts are also known.

- (i) Mathematics teacher F from Noida took only one class. It was scheduled on Sunday.
- (ii) A was a Chemistry teacher and did not take a class on Sunday.
- (iii) No Physics teacher was from Noida and no Chemistry teacher was either from Delhi or Gurgaon.
- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.12 [11831809]

The correct order of the number of Mathematics classes scheduled on Monday, Wednesday, Friday and Sunday in the week respectively was _____.

1 ☐ 2, 1, 1, 2

2 ☐ 2, 1, 0, 3

3 ☐ 1, 2, 1, 2

4 ☐ 2, 0, 1, 3



Solution:

Correct Answer : 2

Your Answer : 2

 Answer key/Solution

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

The correct order was 2, 1, 0, 3.

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FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

The following facts are also known.

- (i) Mathematics teacher F from Noida took only one class. It was scheduled on Sunday.
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- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.13 [11831809]

Which of the following statement(s) must be CORRECT?

- I. At least one class was scheduled for teacher(s) from each city on each day of the week.
- II. At most two classes were scheduled for teacher(s) of each subject on each day of the week.

1 ☐ I only

2 ☐ II only

3 ☐ Both I and II

4 ☐ Neither I nor II



Solution:

Correct Answer : 1

Your Answer : 1

 Answer key/Solution

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

Only statement I is correct. Statement II is incorrect because there were 3 Mathematics classes were scheduled on Sunday.

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Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

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- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.14 [11831809]

Which of the following statements is FALSE?

- 1 ☐ On Wednesday, exactly one teacher from Gurgaon had a class scheduled.
- 2 ☐ Exactly two classes of Physics were scheduled on Friday.
- 3 ☐ Exactly one and two classes for Delhi teachers were scheduled on Monday and Sunday respectively.
- 4 ☐ Exactly two classes of Chemistry were scheduled on Monday.



Solution:

Correct Answer : 3

Your Answer : 3

 Answer key/Solution

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

The statement given in option (3) is FALSE.

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Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

The following facts are also known.

- (i) Mathematics teacher F from Noida took only one class. It was scheduled on Sunday.
- (ii) A was a Chemistry teacher and did not take a class on Sunday.
- (iii) No Physics teacher was from Noida and no Chemistry teacher was either from Delhi or Gurgaon.
- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.15 [11831809]

What was the correct sequence of the total number of Chemistry, Mathematics and Physics classes scheduled in the week respectively?

1 ☐ 6, 5, 5

2 ☐ 5, 6, 5

3 ☐ 5, 5, 6

4 ☐ 6, 6, 4



Solution:

Correct Answer : 2

Your Answer : 1

 Answer key/Solution

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

The correct order was 5, 6, 5.

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Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Navjot, 12th class HRT, scheduled 16 online revision classes for board students, which were taken by 7 teachers A, B, C, D, E, F and G, on Monday, Wednesday, Friday and Sunday of a week. Each class was taken by exactly one of the seven teachers. Five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Every teacher took at least one class and at most three classes. The total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers. Three of the teachers were from Noida and two each were from Gurgaon and Delhi. Each teacher took classes on exactly one of three subjects - Mathematics, Physics and Chemistry. Three teachers were from Mathematics and two from Physics. No teacher could take more than one class in a day.

The following facts are also known.

- (i) Mathematics teacher F from Noida took only one class. It was scheduled on Sunday.
- (ii) A was a Chemistry teacher and did not take a class on Sunday.
- (iii) No Physics teacher was from Noida and no Chemistry teacher was either from Delhi or Gurgaon.
- (iv) Equal number of classes was scheduled for both C and E. These teachers were from Gurgaon and belonged to different subjects.
- (v) Consecutive classes were scheduled for C in the week but not for E. None of their classes were scheduled on the same day of the week.
- (vi) Mathematics teacher B had a class scheduled on Wednesday. B and G belonged to the same city.
- (vii) D did not have a class scheduled on Friday. E and G belonged to different subjects.

Q.16 [11831809]

Which of the following combinations of Teacher – Subject – City is TRUE?

1 ☐ E – Physics - Gurgaon

2 ☐ D – Mathematics – Noida

3 ☐ B – Mathematics – Noida

4 ☐ G – Physics – Delhi



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

Step 1:

Since the total number of classes taken by B, D and G was two more than the total number of classes taken by the other four teachers.

Therefore, $B + D + G = 9$ and $A + C + E + F = 9 - 2 = 7$

Since every teacher took at least one class and at most three classes. Therefore, the number of classes taken by each of B, D and G is 3.

Also, A, B, E and F could take 1, 2, 2, 2 or 1, 1, 2, 3 classes. From condition (i), F took only one class. From condition (iv), C and E took equal number of classes. So A, B, E and F took classes 2, 2, 2, 1 respectively.

Step 2:

From condition (iii), all Chemistry teachers were from Noida.

From condition (v), classes were scheduled for C on Wednesday & Friday and for E on Monday & Sunday.

From condition (vi), B and G belonged to Delhi. So D belonged to Noida. So D and G were Chemistry and Physics teachers respectively.

From condition (vii), classes were scheduled for D on Monday, Wednesday and Sunday. Also, C and E were Physics and Mathematics teachers respectively.

From the given information, the table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Sunday x,	Chemistry	Noida
B	3	Wednesday,	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Friday x, Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3		Physics	Delhi

Step 3:

Since five classes each were taken on Monday and Sunday, while three classes each were taken on Wednesday and Friday. Hence, the final table can be shown as:

Teacher	No. of classes	Day	Subject	City
A	2	Monday, Friday	Chemistry	Noida
B	3	Monday, Wednesday, Sunday	Mathematics	Delhi
C	2	Wednesday, Friday	Physics	Gurgaon
D	3	Monday, Wednesday, Sunday	Chemistry	Noida
E	2	Monday, Sunday	Mathematics	Gurgaon
F	1	Sunday	Mathematics	Noida
G	3	Monday, Friday, Sunday	Physics	Delhi

The combination given in option (4) is TRUE.

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Six persons - Ash, Ben, Chad, Dan, Erel and Finn - live in different houses on a street that has six houses numbered 1 to 6 in sequence from left to right. Each one travels to his workplace in a different car from among Alto, Ciaz, Polo, Ritz, Xylo and Zen. They leave at half an hour time intervals from 7:00 AM to 9:30 AM such that no two persons leave at the same time. The distance traveled by each one is also different.

The following facts are also known.

(i) The one who lives in house no. 2 is the 4th to leave and he travels 15 km in his Ciaz whereas the one who travels 12 km leaves the earliest but not in a Xylo.

(ii) Erel, who travels 20 km, lives to the immediate right of Finn but does not leave before him for work.

(iii) The ones living at the ends of the row have a Zen and a Polo, also they leave second and second last for work, in any order.

(iv) Ash, who is the third to leave for work travels 10 km less than Finn, in his Ritz.

(v) Chad lives two houses away from Erel, who does not live at any end of the street. Dan is an immediate neighbor of both Ash and Ben.

Q.17 [11831809]

Which of the following can be the correct order of the cars parked from left to right?

1 ☐ Alto, Ciaz, Xylo, Polo, Ritz, Zen

2 ☐ Zen, Ciaz, Xylo, Ritz, Alto, Polo

3 ☐ Ciaz, Xylo, Ritz, Alto, Polo, Zen

4 ☐ Ritz, Alto, Polo, Zen, Ciaz, Xylo



Solution:

Correct Answer : 2

Your Answer : 2

 Answer key/Solution

From condition (i), The one who lives in house no. 2, leaves at 8:30 AM and travels 15 km in his Ciaz.
From conditions (ii) and (v), Chad, Finn and Erel live in house No. 1, 2 and 3 respectively.
From conditions (iv) and (v), Ash, Dan and Ben live in house No. 4, 5 and 6 respectively.
From condition (iii), Chad and Ben leave either at 7:30 AM or 9:00 AM. Also they have either Zen or Polo.
From condition (iv), Ash travels 5 km in his Ritz and Dan have Alto.
So Erel have Xylo and leaves at 9:30 AM. Dan leaves at 7:00 AM.
Hence, the given information can be shown in the table given below.

House no.	1	2	3	4	5	6
Person	Chad	Finn	Erel	Ash	Dan	Ben
Car	Zen / Polo	Ciaz	Xylo	Ritz	Alto	Polo / Zen
Time (in AM)	9:00 / 7:30	8:30	9:30	8:00	7:00	7:30 / 9:00
Distance	-	15 km	20 km	5 km	12 km	-

We can see clearly that only option (2) is a possible arrangement of cars from left to right.

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Six persons - Ash, Ben, Chad, Dan, Erel and Finn - live in different houses on a street that has six houses numbered 1 to 6 in sequence from left to right. Each one travels to his workplace in a different car from among Alto, Ciaz, Polo, Ritz, Xylo and Zen. They leave at half an hour time intervals from 7:00 AM to 9:30 AM such that no two persons leave at the same time. The distance traveled by each one is also different.

The following facts are also known.

- (i) The one who lives in house no. 2 is the 4th to leave and he travels 15 km in his Ciaz whereas the one who travels 12 km leaves the earliest but not in a Xylo.
- (ii) Erel, who travels 20 km, lives to the immediate right of Finn but does not leave before him for work.
- (iii) The ones living at the ends of the row have a Zen and a Polo, also they leave second and second last for work, in any order.
- (iv) Ash, who is the third to leave for work travels 10 km less than Finn, in his Ritz.
- (v) Chad lives two houses away from Erel, who does not live at any end of the street. Dan is an immediate neighbor of both Ash and Ben.

Q.18 [11831809]

Which of the following could be the correct order of house numbers of the persons leaving first to last for work?

1 ☐ 5 - 6 - 4 - 2 - 1 - 3

2 ☐ 5 - 4 - 2 - 6 - 1 - 3

3 ☐ 2 - 6 - 4 - 5 - 3 - 1

4 ☐ 6 - 4 - 2 - 1 - 3 - 5

Solution:

Correct Answer : 1

 Answer key/Solution

From condition (i), The one who lives in house no. 2, leaves at 8:30 AM and travels 15 km in his Ciaz.
From conditions (ii) and (v), Chad, Finn and Erel live in house No. 1, 2 and 3 respectively.
From conditions (iv) and (v), Ash, Dan and Ben live in house No. 4, 5 and 6 respectively.
From condition (iii), Chad and Ben leave either at 7:30 AM or 9:00 AM. Also they have either Zen or Polo.
From condition (iv), Ash travels 5 km in his Ritz and Dan have Alto.
So Erel have Xylo and leaves at 9:30 AM. Dan leaves at 7:00 AM.
Hence, the given information can be shown in the table given below.

House no.	1	2	3	4	5	6
Person	Chad	Finn	Erel	Ash	Dan	Ben
Car	Zen / Polo	Ciaz	Xylo	Ritz	Alto	Polo / Zen
Time (in AM)	9:00 / 7:30	8:30	9:30	8:00	7:00	7:30 / 9:00
Distance	-	15 km	20 km	5 km	12 km	-

It is clear that the only correct option can be (1).

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Six persons - Ash, Ben, Chad, Dan, Erel and Finn - live in different houses on a street that has six houses numbered 1 to 6 in sequence from left to right. Each one travels to his workplace in a different car from among Alto, Ciaz, Polo, Ritz, Xylo and Zen. They leave at half an hour time intervals from 7:00 AM to 9:30 AM such that no two persons leave at the same time. The distance traveled by each one is also different.

The following facts are also known.

- (i) The one who lives in house no. 2 is the 4th to leave and he travels 15 km in his Ciaz whereas the one who travels 12 km leaves the earliest but not in a Xylo.
- (ii) Erel, who travels 20 km, lives to the immediate right of Finn but does not leave before him for work.
- (iii) The ones living at the ends of the row have a Zen and a Polo, also they leave second and second last for work, in any order.
- (iv) Ash, who is the third to leave for work travels 10 km less than Finn, in his Ritz.
- (v) Chad lives two houses away from Erel, who does not live at any end of the street. Dan is an immediate neighbor of both Ash and Ben.

Q.19 [11831809]

If the person who leaves after Dan travels 5 km less than him, then which of the following statements can be true?

1 ☐ The one traveling by Zen covers 15 km to go to work.

2 ☐ Chad's office is at a distance of 7 km from his house.

3 ☐ Ben's office is 5 km away from his house.

4 ☐ The one traveling by Polo covers 20 km to go to work.

Solution:

Correct Answer : 2

 Answer key/Solution

From condition (i), The one who lives in house no. 2, leaves at 8:30 AM and travels 15 km in his Ciaz.
From conditions (ii) and (v), Chad, Finn and Erel live in house No. 1, 2 and 3 respectively.
From conditions (iv) and (v), Ash, Dan and Ben live in house No. 4, 5 and 6 respectively.
From condition (iii), Chad and Ben leave either at 7:30 AM or 9:00 AM. Also they have either Zen or Polo.
From condition (iv), Ash travels 5 km in his Ritz and Dan have Alto.
So Erel have Xylo and leaves at 9:30 AM. Dan leaves at 7:00 AM.
Hence, the given information can be shown in the table given below.

House no.	1	2	3	4	5	6
Person	Chad	Finn	Erel	Ash	Dan	Ben
Car	Zen / Polo	Ciaz	Xylo	Ritz	Alto	Polo / Zen
Time (in AM)	9:00 / 7:30	8:30	9:30	8:00	7:00	7:30 / 9:00
Distance	-	15 km	20 km	5 km	12 km	-

We can see that the only option that can be true is (2).

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Six persons - Ash, Ben, Chad, Dan, Erel and Finn - live in different houses on a street that has six houses numbered 1 to 6 in sequence from left to right. Each one travels to his workplace in a different car from among Alto, Ciaz, Polo, Ritz, Xylo and Zen. They leave at half an hour time intervals from 7:00 AM to 9:30 AM such that no two persons leave at the same time. The distance traveled by each one is also different.

The following facts are also known.

- (i) The one who lives in house no. 2 is the 4th to leave and he travels 15 km in his Ciaz whereas the one who travels 12 km leaves the earliest but not in a Xylo.
- (ii) Erel, who travels 20 km, lives to the immediate right of Finn but does not leave before him for work.
- (iii) The ones living at the ends of the row have a Zen and a Polo, also they leave second and second last for work, in any order.
- (iv) Ash, who is the third to leave for work travels 10 km less than Finn, in his Ritz.
- (v) Chad lives two houses away from Erel, who does not live at any end of the street. Dan is an immediate neighbor of both Ash and Ben.

Q.20 [11831809]

Ben reaches his office when Erel leaves home and he travels at 20 km/hr, then which of the following can be the distance of his office from home?

1 ☐ 60 km

2 ☐ 80 km

3 ○ 20 km

4 ○ 10 km

Solution:

Correct Answer : 4

[Answer key/Solution](#)

From condition (i), The one who lives in house no. 2, leaves at 8:30 AM and travels 15 km in his Ciaz.
From conditions (ii) and (v), Chad, Finn and Erel live in house No. 1, 2 and 3 respectively.
From conditions (iv) and (v), Ash, Dan and Ben live in house No. 4, 5 and 6 respectively.
From condition (iii), Chad and Ben leave either at 7:30 AM or 9:00 AM. Also they have either Zen or Polo.
From condition (iv), Ash travels 5 km in his Ritz and Dan have Alto.
So Erel have Xylo and leaves at 9:30 AM. Dan leaves at 7:00 AM.
Hence, the given information can be shown in the table given below.

House no.	1	2	3	4	5	6
Person	Chad	Finn	Erel	Ash	Dan	Ben
Car	Zen / Polo	Ciaz	Xylo	Ritz	Alto	Polo / Zen
Time (in AM)	9:00 / 7:30	8:30	9:30	8:00	7:00	7:30 / 9:00
Distance	-	15 km	20 km	5 km	12 km	-

Erel leaves at 9:30 AM whereas Ben either leaves at 7:30 AM or at 9:00 AM, which means he travels for 2 hours or 1/2 an hour. It is given that he travels at a speed of 20 km/hr. The distance of his office can be 10 km or 40 km from his house. Hence, option (4) is correct.

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