CAT 2025

MBA FASTRACK BATCH

LR & DI

Lecture - 01 | **Logical Reasoning**

Arrangements & Distribution

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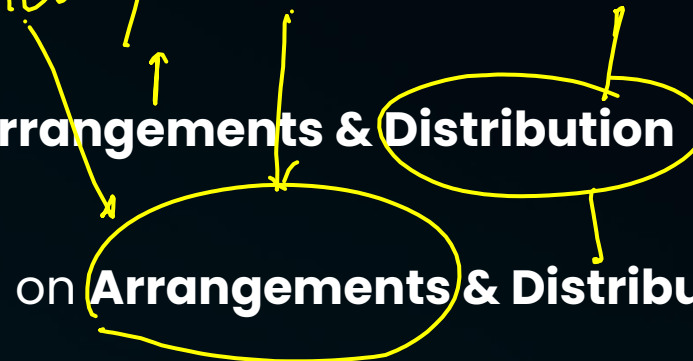
TOPICS

to be covered

linear / Circular

1 Basics of **Arrangements & Distribution**

2 Sets based on **Arrangements & Distribution**

Topic : Arrangements

Basics of Arrangements

Linear Arrangements

Concept of selection left or right, North or South

Left

Right → ①

$\overline{1}$ $\overline{2}$ $\overline{3}$ $\overline{4}$ $\overline{5}$ $\overline{6}$ $\overline{7}$ $\overline{8}$

① Right ↓ ↓ ↓ ↓ ↓ → left

② left ↑ ↑ ↑ ↑ ↑ → Right

Linear Arrangements

Commonly used statements:

- A sits on 4th position from left end of the row $4 \rightarrow A$.

- B sits at one of the extreme ends of the row $B \rightarrow 1$ or 8

- C sits at the left end of the row $C \rightarrow 1$
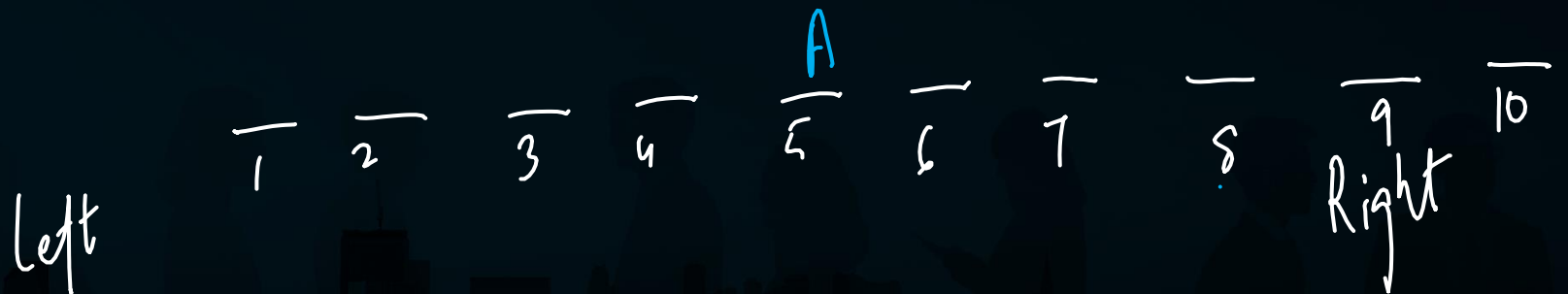
- No one sits to the right of D $D \rightarrow 8$

$\overline{1} \quad \overline{2} \quad \overline{3} \quad \overline{4} \quad \overline{5} \quad \overline{6} \quad \overline{7} \quad \overline{8}$

Left   Right

Commonly used statements:

- B sits to the left of A
- B is 3 places away from A
- B is 3 places to the (left) of A

if $A \to 4$, $B \to$ 1 or 2 or 3

if $A \to 5$ $B = 2$ or 8

if $A \to 5$ $B \to 2$

$$\overline{}_{1} \quad \overline{}_{2} \quad \overline{}_{3} \quad \overline{}_{4} \quad \overset{A}{\overline{}}_{5} \quad \overline{}_{6} \quad \overline{}_{7} \quad \overline{}_{8} \quad \overset{}{\overline{}}_{9} \quad \overline{}^{10}$$

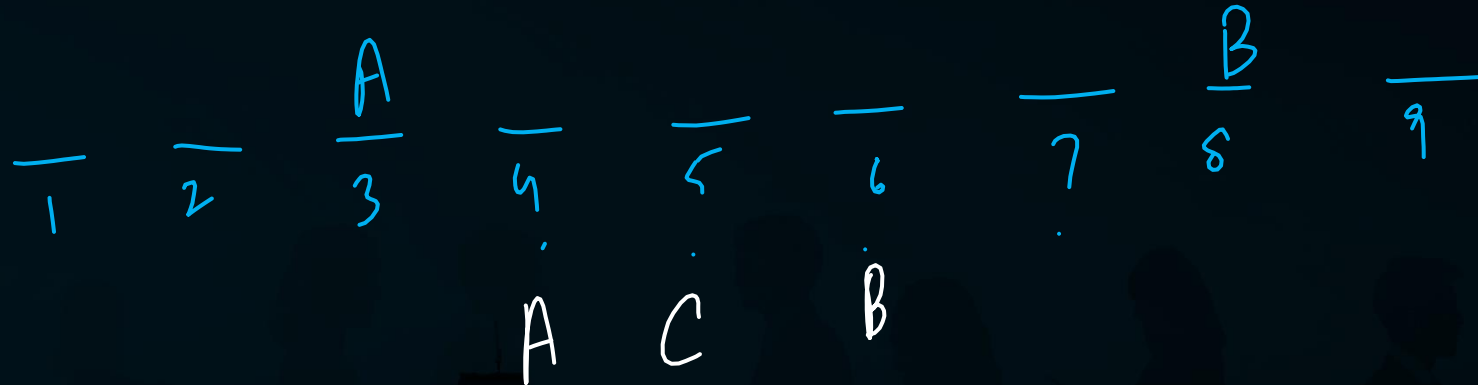left   Right

Linear Arrangements

Commonly used statements:

- C sits between A and B

- Only C sits between A and B

$$\text{if } A = 3, B = 8 \longrightarrow C \rightarrow 4/5/6/7$$

$$\overline{\underset{1}{}} \quad \overline{\underset{2}{}} \quad \overline{\underset{3}{A}} \quad \overline{\underset{4}{}} \quad \overline{\underset{5}{}} \quad \overline{\underset{6}{}} \quad \overline{\underset{7}{}} \quad \overline{\underset{8}{B}} \quad \overline{\underset{9}{}}$$

A   C   B

Linear Arrangements

Commonly used statements:
- D is an immediate neighbor of E
- D sits next to E
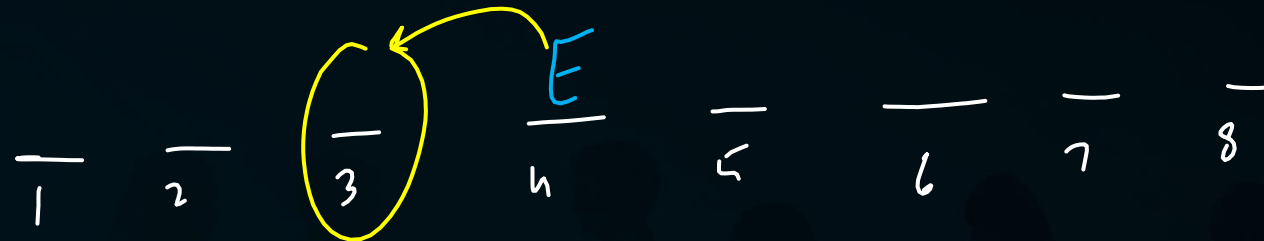- D sits to the immediate left of E

if $E \to 4$ $D \to 3$ or 5

if $E = 4$ $D \to 3$ or 5

if $E = 4$ $D \to 3$

$\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$

1   2   3   4   5   6   7   8

E (above 4)

Circular Arrangements
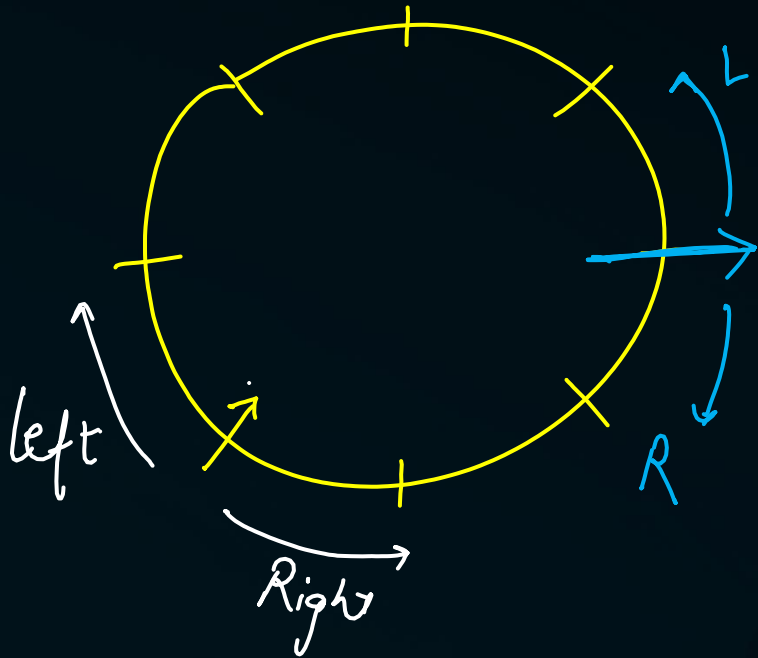
Face → Inside   Outside

left → Clockwise   anti-clock

Right → anti-clock   Clockwise

①   A is left ξ B

A is immediate left ξ B   ] $\longrightarrow$ Same

② $\boxed{\text{A is between B & C}}$

only A is between B & C   ] $\longrightarrow$ Same

Set-1

#Q. Ten people are seated in two parallel rows, containing five people in each row. They Iike three different types of cakes, viz. Sponge, Butter and Chiffon cakes, but not necessarily in the same order. In Row 1, A, B, C, D, E are seated facing the South. In Row 2, P, Q R, S, T are seated facing the North. P, who likes Sponge cake, sits at one of the extreme ends. D, who likes Butter cake, faces S. A, who likes Chiffon cake, sits second to the left of D. Q, who likes neither Chiffon nor Sponge cake, sits third to the left of P. E, who sits at one of the extreme ends of the row, sits third to the right of C, who faces R. Only four people in the group like Chiffon cake. Both C and R, who doesn't like Chiffon cake, like the same kind of cake. E likes neither Sponge nor Chiffon cake. Only one person among the five seated in row-2 likes Butter cake.

#Q.   Who is seated third to the right of A ?
    (A) B   (B) E   (C) C   (D) D

#Q.   Who is facing Q ?
    (A) C   (B) E   (C) B   (D) A

#Q.   How many people in the group like Sponge cake ?
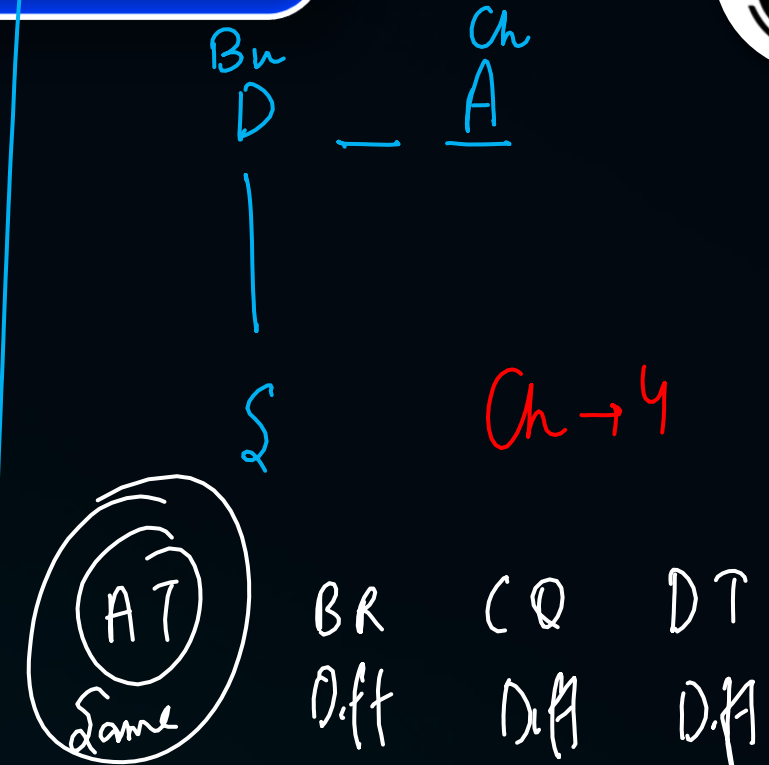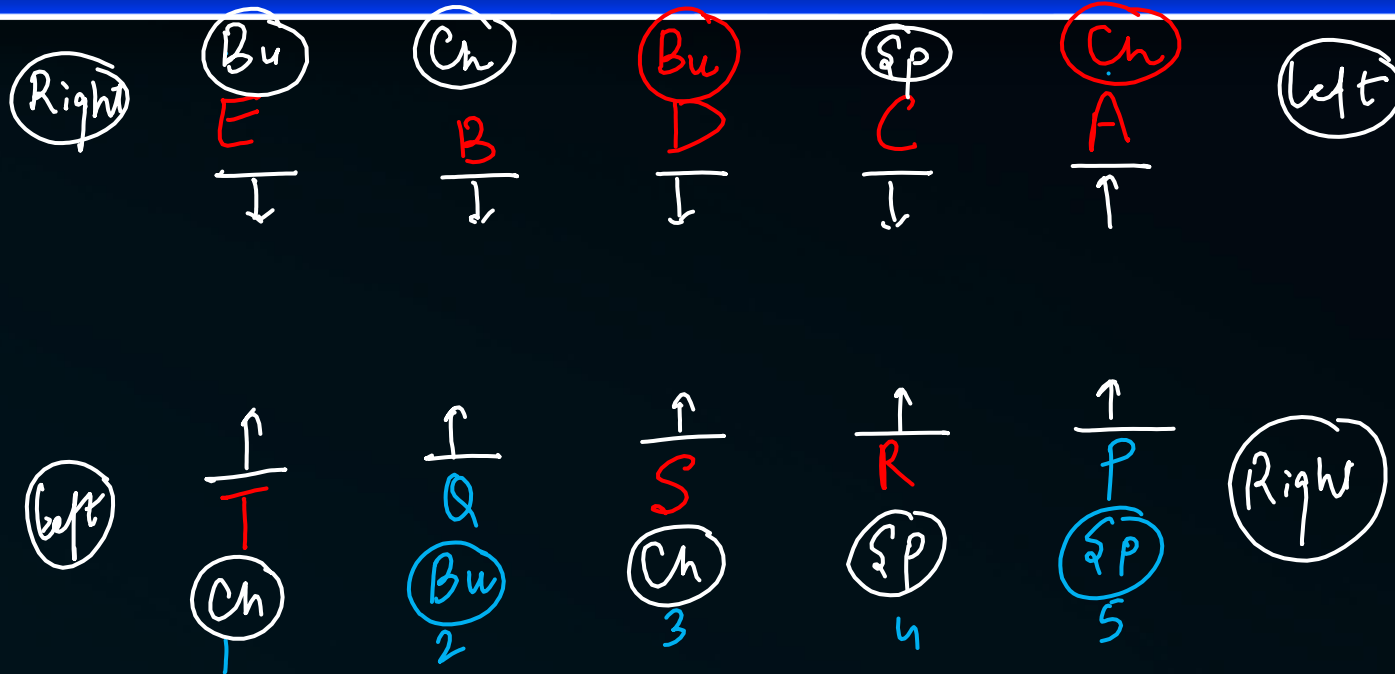   (A) 1   (B) 2   (C) 3   (D) 4

#Q.   Which of the following statements is True based on the given information?
    (A) Number of people who like Chiffon cakes is one more than the number of people who like Sponge cakes.
    (B) S likes Butter cakes.
    (C) B, who faces Q, is seated at one of the extreme ends of the row.
    (D) T likes Sponge cake.

#Q.   Three of the four are alike in a certain way and thus form a group. Find out the odd one out that doesn't belong to that group.
    (A) A – T   (B) B – R   (C) C – Q   (D) D – T

Read the following passage and answer the given questions.

Row 1 (facing South):

(Right)	(Bu) E ↓	(Ch) B ↓	(Bu) D ↓	(Sp) C ↓	(Ch) A ↑	(left)

Bu
D _ _ A
Ch

Row 2 (facing North):

(left)	↑ T Ch	↑ Q (Bu) 2	↑ S Ch 3	↑ R (Sp) 4	↑ P (Sp) 5	(Right)

Ch → 4

(A T Same)

BR	CQ	DT
Diff	Diff	Diff

Ten people are seated in two parallel rows, containing five people in each row. They like three different types of cakes, viz. Sponge, Butter and Chiffon cakes, but not necessarily in the same order. In Row 1, A, B, C, D, E are seated facing the South. In Row 2, P, Q R, S, T are seated facing the North. P, who likes Sponge cake, sits at one of the extreme ends. D, who likes Butter cake, faces S. A, who likes Chiffon cake, sits second to the left of D. Q, who likes neither Chiffon nor Sponge cake, sits third to the left of P. E, who sits at one of the extreme ends of the row, sits third to the right of C, who faces R. Only four people in the group like Chiffon cake. Both C and R, who doesn't like Chiffon cake, like the same kind of cake. E likes neither Sponge nor Chiffon cake. Only one person among the five seated in row-2 likes Butter cake.

#Q. Who is seated third to the right of A ?

A B

B E

C C

D D

#Q.   Who is facing Q ?

A C

B E

C B

D A

#Q. How many people in the group like sponge cake?

A 1

B 2

C 3

D 4

#Q. Which of the following statements is True based on the given information?

A Number of people who like Chiffon cakes is one more than the number of people who like Sponge cakes.

B S likes Butter cakes.

C B, who faces Q, is seated at one of the extreme ends of the row.

D T likes Sponge cake.

#Q. Three of the four are alike in a certain way and thus form a group. Find out the odd one out that doesn't belong to that group.

A) A-T

B) B-R

C) C-Q

D) D-T

Set-2

Eight friends, A, B, C, D, E, F, G, and H, are sitting around a circular table, not necessarily in the same order. Four of them face away from the centre and four of them face towards the centre.

The following information is also known.

a. Both the immediate neighbours of A, who is not an immediate neighbour of D, face away from the centre.

b. F faces away and both the immediate neighbours of F face towards the centre.

c. E sits second to the right of F, while D sits third to the left of F.

d. G is an immediate neighbour of A, who faces towards the centre.

e. B, who faces away from the centre, is an immediate neighbour of H, who sits second to the left of C.

f. D sits third to the right of E.

#Q. Who among the following sits third to the right of C?

(A) A (B) F (C) G (D) C

#Q. Who among the following sits second to the right of E?
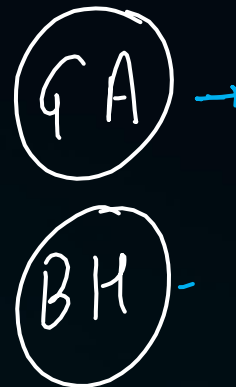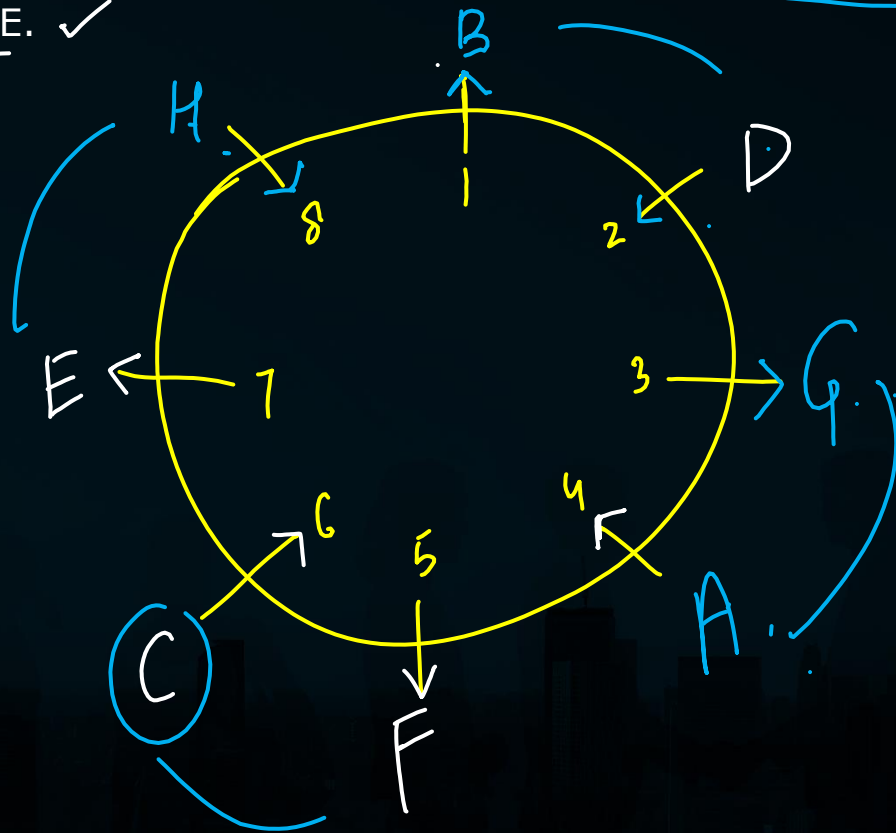
(A) B (B) D (C) C (D) F

#Q. How many pairs of friends are there who sit to the right of each other?

(A) 1 (B) 2 (C) 3 (D) 4

#Q. How many people are seated between B and C when counted clockwise from C?

(A) 1 (B) 2 (C) 3 (D) 4

Eight friends, A, B, C, D, E, F, G, and H, are sitting around a circular table, not necessarily in the same order.

Four of them face away from the centre and four of them face towards the centre.

a. Both the immediate neighbours of A, who is not an immediate neighbour of D, face away from the centre.

b. F faces away and both the immediate neighbours of F face towards the centre. ✓

c. E sits second to the right of F, while D sits third to the left of F. ✓

d. G is an immediate neighbour of A, who faces towards the centre.

e. B, who faces away from the centre, is an immediate neighbour of H, who sits second to the left of C. ✓

f. D sits third to the right of E. ✓

#Q. Who among the following sits third to the right of C?

A A

B F

C G

D C

#Q. Who among the following sits second to the right of E?

A. B

B. D

C. C

D. F

#Q. How many pairs of friends are there who sit to the right of each other?

A) 1

B) 2

C) 3

D) 4

#Q. How many people are seated between B and C when counted clockwise from C?

A 1

B 2

C 3

D 4

DISTRIBUTION

Name	City	Car	Comp.
A	Del	Mer	App.
B	Bang	Bmw	MS
C	KA	Audi	Googl
D	Che	RR	Amazon

Dates
Month

	City	Car	Comp.
①	B	x Ad	Googl
②	Che	Bmw	x MS.

Set-3

#Q. Kuldeep, Liaquat, Manjit, and Nathan are four sprinters that participated in each of the four different races – Race-I, Race-II, Race-III, and Race-IV – during a racing event. Each is trained by a different trainer among A, B, C, and D, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3, and 4 according to the positions at which they finished in the race.

C's trainee finished at the same position in Race-I and Race-II, and also in Race-III and Race-IV, which was different from that in races I and II.

- In Race-IV, Kuldeep and Manjit interchanged the positions at which they had finished in Race-II.

- In Race-I, Liaquat finished third and D's trainee finished first.

- In Race-II, Liaquat finished first and D's trainee finished third. In Race-IV, Liaquat finished third and Manjit finished fourth.

- In Race-III, Manjit finished fourth and Nathan finished second.

- A's trainee did not finish first in any of the four races.

#Q. Who was trained by A?

A. Kuldeep   B. Kuldeep or Liaquat   C. Liaquat   D. Manjit or Nathan

#Q. Who is Manjit's trainer?

A. A   B. B   C. A or B   D. C

#Q. Who finished 4th in Race 2?

A. Manjit   B. Manjit or Nathan   C. Kuldeep   D. Nathan

#Q. Who finished 2nd in Race 1?

A. Nathan   B. Manjit   C. Nathan or Manjit   D. Liaquat

#Q. Who is the trainer of the sprinter who finished 3rd in race 3?

A. D   B. C   C.B   D. A

Kuldeep, Liaquat, Manjit, and Nathan are four sprinters that participated in each of the four different races – Race-I, Race-II, Race-III, and Race-IV – during a racing event. Each is trained by a different trainer among A, B, C, and D, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3, and 4 according to the positions at which they finished in the race.

C's trainee finished at the same position in Race-I and Race-II, and also in Race-III and Race-IV, which was different from that in races I and II.

- In Race-IV, Kuldeep and Manjit interchanged the positions at which they had finished in Race-II.
- In Race-I, Liaquat finished third and D's trainee finished first.
- In Race-II, Liaquat finished first and D's trainee finished third. In Race-IV, Liaquat finished third and Manjit finished fourth.
- In Race-III, Manjit finished fourth and Nathan finished second.
- A's trainee did not finish first in any of the four races.

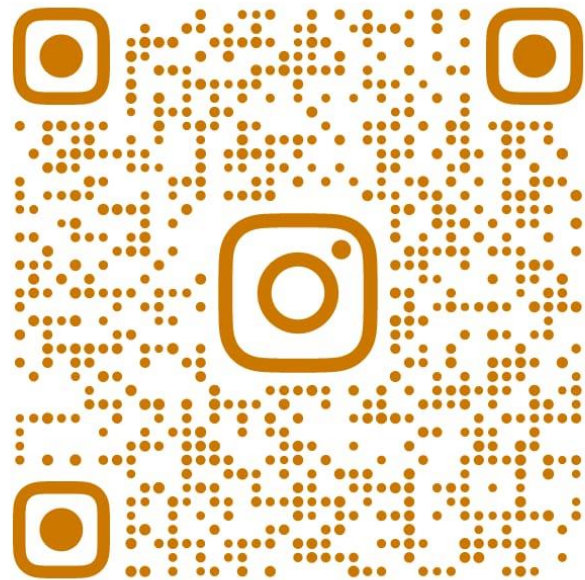|	Trainer	R-1	R-2	R-3	R-4
Kuldeep	A	4	P→4	3	q→2
Liaquat	B	3.	1.	1.	3.
Manjit	C	2	q→2	4	P→4
Nathan	D	1	3	2	1

C
D

x   x
1   3

y   y

Telegram

MBA

@PWMBAWALLAH

IG

@PWMBAWALLAH

THANK You