CAT DILR G Strategy Workbook

G Strategy Cut-offs Clearing Workshops

DILR

Importance of each G Strategy in CAT Exam

Category	G Strategy	CAT 2019	CAT 2020	CAT 2021	CAT 2022	CAT 2023	CAT 2024	Grand Total
Arrangements	Teeny Wordy	8						8
Arrangements	Teeny Numbers	8	8	8	10	20	4	58
Arrangements	Wide Wordy	8	8	10	10		8	44
Arrangements	Wide Numbers	8	16	20			6	50
Arrangements	Scheduling	4	6	14		15		39
Arrangements	Routes	4			10	5	9	28
Arrangements Total		**40**	**38**	**52**	**30**	**40**	**27**	**227**
Calculations	Caselet Calculations	4	10		5	15	8	42
Calculations	Caselet Classifications		4	4	15	5	6	34
Calculations	DI Graphs based	16	4	4	4		5	33
Calculations	Tables & Fill in Blanks		4		6		8	18
Calculations	Modern DI		4				8	12
Calculations	Venn Diagram	4	8				4	16
Calculations Total		**24**	**34**	**8**	**30**	**20**	**39**	**155**
Grand Total		**64**	**72**	**60**	**60**	**60**	**66**	**380**

Actual CAT PYQ	
Actual	2021 - 2024
Medium	2017 – 2020
Easy	2001 – 2008

Cutoffs	Minimum	Good
GEM	80%ile	90%ile
General	70%ile	80%ile
EWS / OBC	60%ile	70%ile
SC ST PwD	50%ile	70%ile

DILR	Marks
60%ile	9
70%ile	12
80%ile	15
90%ile	24
97%ile	33
99%ile	39

mockniti

30	Full Length Mocks
10	Strategy MockNiti Workshops
36	Baby Mocks G Strategy
23	CAT Actual Papers (2024 – 2017)
28	Quant CAT PYQ Topic Wise Tests
31	Verbal CAT PYQ Topic Wise Tests
20	DILR CAT PYQ Topic Wise Tests

For best results: go to IIMking.com, log in, and navigate to Assigned Courses > CAT G Strategy to view the G Strategy videos.

1. Teeny Wordy

CAT 1998 Beauty Contest 4 members

Bankatlal acted as a judge for the beauty contest. There were four participants, viz. Ms. Andhra Pradesh, Ms. Uttar Pradesh, Ms. West Bengal and Ms. Maharashtra. Mrs. Bankatlal, who was very anxious about the result asked him about it as soon as he was back home. Bankatlal just told that the one who was wearing the yellow saree won the contest. When Mrs. Bankatlal pressed for further details, he elaborated as follows:

I. All of them were sitting in a row

II. All of them wore sarees of different colors, viz. Green, Yellow, White, Red

III. There was only one runner up and she was sitting beside Ms. Maharashtra

IV. The runner up was wearing the Green saree

V. Ms. West Bengal was not sitting at the ends and was not a runner up

VI. The winner and the runner up are not sitting adjacent to each other

VII.Ms. Maharashtra was wearing white saree

VIII.Ms. Andhra Pradesh was not wearing the Green saree

IX. Participants wearing Yellow saree and White saree were at the ends

1. Who wore the Red saree?
(a) Ms. Andhra Pradesh (b) Ms. West Bengal
(c) Ms. Uttar Pradesh (d) Ms. Maharashtra
2. Ms. West Bengal was sitting adjacent to?
(a) Ms. Andhra Pradesh and Ms. Maharashtra (b) Ms. Uttar Pradesh and Ms. Maharashtra
(c) Ms. Andhra Pradesh and Ms. Uttar Pradesh (d) Ms. Uttar Pradesh only
3. Which saree was worn by Ms. Andhra Pradesh?
(a) Yellow (b) Red (c) Green (d) White
4. Who was the runner up?
(a) Ms. Andhra Pradesh (b) Ms. West Bengal
(c) Ms. Uttar Pradesh (d) Ms. Maharashtra
5. Which saree was worn by Ms. Maharashtra?
(a) Yellow (b) Red (c) Green (d) White

(b) Ms. West Bengal
(c) Ms. Andhra Pradesh and Ms. Uttar Pradesh
(a) Yellow
(c) Ms. Uttar Pradesh
(d) White

Pos	Person	Saree	Remark
1	MH	White	
2	UP	Green	Runner-Up
3	WB	Red	
4	AP	Yellow	Winner

CAT 1998 Game 8 rounds Arrangement

Game includes various rounds where A, B, C, D are to be seated in a row. Each round will have different sitting arrangement but C and D cannot be together. Also, B cannot be at the third place.

1. How many rounds are there with A taking the first place? A) 0 B) 2 C) 3 D) 4
2. How many rounds are there with B taking the first place? A) 0 B) 2 C) 3 D) 4
3. How many rounds are there with C taking the first place? A) 0 B) 2 C) 3 D) 4
4. How many rounds are there with D taking the first place? A) 0 B) 2 C) 3 D) 4

5. How many rounds are played with A and B sitting together? A) 0 B) 2 C) 3 D) 4
6. How many rounds are played with A and C sitting together? A) 0 B) 2 C) 3 D) 4
7. How many rounds are played with B and D sitting together? A) 0 B) 2 C) 3 D) 4
8. How many rounds are played in total?
A) 6 B) 7 C) 8 D) 9

9. Which of the following must be false?
(a) A is at the first place (b) A is at the second place
(c) A is at the third place (d) A is at the fourth place
10. If A is not at the third place, then C has the following option only
(a) the first place only (b) the third place only
(c) first and third place only (d) any of the places
11. If A and B are together then which of the following must be necessarily false
(a) C is not at the first place (b) A is at the second place (c) D is at the first place (d) C is at the first place

1. A at first → 0 cases → Answer: A) 0→ Cases: (none)
2. B at first → 2 cases → Answer: B) 2 → Cases: BCAD, BDAC
3. C at first → 3 cases → Answer: C) 3 → Cases: CBAD, CBDA, CADB
4. D at first → 3 cases → Answer: C) 3 → Cases: DBAC, DBCA, DACB
5. A and B together → 2 case → CBAD, DBAC
6. A and C together → 5 cases → BCAD, BDAC, DBCA, CADB, DACB
7. B and D together → 5 cases → BDAC, CBDA, DBAC, DBCA, CADB
8. Total rounds → 8 → Answer: C) 8

BCAD, BDAC, CBAD, CBDA, DBAC, DBCA, CADB, DACB

9. A is at the first place: Looking at the above list, 'A' is never at the first place.
10. CBDA, DBCA, CADB, DACB, C can be at the first or third place.
11. CBAD, DBAC, C can be in the first place.

CAT 1998 Color 8 Games

Amar, Akbar, and Anthony are participating in a friendly inter-colony sports event with 8 games. Each participant must wear a shirt in one of three team colors: Red, Green, or Blue for each of the game.
Amar will never wear a Red shirt, Akbar will never wear a Green shirt, Anthony will never wear a Blue shirt.

1. In how many games are Amar and Akbar wearing the same color? (a) 0 (b) 2 (c) 3 (d) 6
2. In how many games are all three wearing different colors? (a) 0 (b) 2 (c) 3 (d) 6
3. In how many games are all three wearing same colors? (a) 0 (b) 2 (c) 3 (d) 6
4. How many games have exactly two people wearing the same color? (a) 0 (b) 2 (c) 3 (d) 6
5. Amar wears Green in how many games? (a) 4 (b) 2 (c) 3 (d) 6

6. In any of the games, If Akbar and Anthony wear the same colour, then which of the following is not true?
(a) Amar wears blue and Akbar wears green
(b) Amar wears green and Akbar wears red.
(c) Amar wears blue and Akbar does not wear blue
(d) Anthony wears red

7. If two of them wear the same colour then how many of the following must be false
I. Amar wears blue and Akbar does not wear green
II. Amar does not wear blue and Akbar wears blue.
III. Amar does not wear blue and Akbar not wear blue
IV. Amar wears green. Akbar does not wear red. Anthony does not wear green
(a) 0 (b) 1 (c) 2 (d) 3

1. (b) Amar and Akbar same color: 2 (rows 3,4)
2. (b) All three different colors: 2 (rows 1,2)
3. (a) All three same color: 0
4. (d) Exactly two same color: 6 (rows 3-8)
5. (a) 4 games Amar wear Green
6. (a) Amar blue and Akbar green NOT possible
7. (b) Amar wears green. Akbar does not wear red. Anthony does not wear green

Game	Amar	Akbar	Anthony
1	Green	Blue	Red
2	Blue	Red	Green
3	Blue	Blue	Red
4	Blue	Blue	Green
5	Green	Red	Green
6	Green	Blue	Green
7	Green	Red	Red
8	Blue	Red	Red

CAT 2003 Idlis Arrangement

Five friends meet every morning at Sree sagar restaurant for an idli-vada breakfast. Each consumes a different number of idlis and vadas. The number of idlis consumed are 1, 4, 5, 6 and 8 while the number of vadas consumed are 0, 1, 2, 4, and 6. Below are some more facts about who eats what and how much.
(i) The number of vadas eaten by Ignesh is three times the number of vadas consumed by the person who eats four idlis
(ii) Three persons, including the one who eats four vadas, eat without chutney
(iii) Sandeep does not take any chutney
(iv) The one who eats one idli a day does not eat any vadas or chutney. Further he is not Mukesh
(v) Daljit eats idli with chutney and also eats vada
(vi) Mukesh, who does not take chutney, eats half as many vadas as the person who eats twice as many idlis as he does
(vii) Bimal eats two more idlis than Ignesh, but Ignesh eats two more vadas than Bimal

1. Which of the following statements is true?
(a) Mukesh eats 8 idlis and 4 vadas but no chutney
(b) The person who eats 5 idlis and 1 vada does not take chutney
(c) The person who eats equal numbers of vadas and idlis also takes chutney
(d) The person who eats 4 idlis and 2 vadas also takes chutney

2. Which of the following statements is true?
(a) Sandeep eats 2 vadas (b) Mukesh eats 4 vadas
(c) Ignesh eats 4 vadas (d) Bimal eats 4 vadas

3. Which one of the following statements is true?
(a) Daljit eats 5 idlis (b) Ignesh eats 8 idlis
(c) Bimal eats 1 idli (d) Bimal eats 6 idlis

4. Which of the following statements about the friends' breakfast habits is true?
A) Sandeep eats 1 idli and takes chutney.
B) Daljit does not eat any vadas.
C) Ignesh eats two more idlis than Bimal.
D) The person who eats 4 idlis also eats 2 vadas.

5. Suppose the person who eats 5 idlis switches his idli count with the person who eats 4 idlis, while all other data remains unchanged. Under this new setup, which of the following statements becomes logically inconsistent with the original clues?
A) The person eating 5 idlis eats 1 vada and takes chutney
B) Mukesh eats half as many vadas as the person who eats twice as many idlis as he does

C) Bimal eats two more idlis than Ignesh, and Ignesh eats two more vadas than Bimal
D) The person who eats 1 idli eats no vadas or chutney

6. Assuming the person who eats 6 vadas had instead eaten only 3 vadas (but no other value changes), which of the following original clue(s) would now be violated?
A) Only Clue (i): "Ignesh eats 3 times the vadas of the person who eats 4 idlis"
B) Only Clue (vii): "Ignesh eats two more vadas than Bimal"
C) Both Clue (i) and (vii)
D) None – all clues still hold

Solution

Person	Idlis	Vadas	Chutney	Calculations / Reasoning
Sandeep	1	0	No	Clue (iv): 1 idli, 0 vadas, no chutney; not Mukesh. Also satisfies Clue (iii): Sandeep doesn't take chutney
Ignesh	6	6	Yes	Clue (i): He eats 3× vadas of the person with 4 idlis → 3×2 = 6. Also, from Clue (vii): Bimal = Ignesh +2 idlis; Ignesh = Bimal +2 vadas
Bimal	8	4	No	From Clue (vii): Bimal = Ignesh +2 idlis → 6+2 = 8; Bimal = Ignesh -2 vadas → 6-2 = 4. Chutney = No by Clue (ii): 3 persons incl. 4-vada eater have no chutney
Mukesh	4	2	No	Clue (vi): If Mukesh has 4 idlis, person with 8 idlis eats 4 vadas → Mukesh eats half → 2 vadas. Chutney = No by clue
Daljit	5	1	Yes	Clue (v): Eats idli with chutney and also eats vada > 0. Only combo left is (5 idlis, 1 vada)

1. (c) Ignesh takes 6 Idli and 6 Vada and takes Chutney.
2. (d) Clearly, Ignesh eats and Vadas.
3. (a) We get the following table :
4. (b) Originally: Mukesh = 4 idlis, 2 vadas; Bimal = 8 idlis, 4 vadas
After swap: Mukesh = 5 idlis → 2x = 10 idlis (none exist)
→ Person with 10 idlis doesn't exist → Clue (vi) breaks
5. (a) Option A) ✗ False — Sandeep eats 1 idli but does not take chutney.
Option B) ✗ False — Daljit eats 1 vada.
Option C) ✗ False — Ignesh eats 6, Bimal eats 8 → Ignesh eats 2 fewer, not more.
Option D) ✓ True — Mukesh eats 4 idlis and 2 vadas.
6. (c) If Ignesh eats 3 vadas:
Clue (i): He's no longer 3× person with 4 idlis (who has 2 vadas) → 3 ≠ 3×2 ✗
Clue (vii): He no longer has 2 more vadas than Bimal (Bimal = 4) → 3 < 4 ✗

CAT 2001 Truth Lair 3 statements

While Balbir had his back turned, a dog ran into his butcher shop, snatched a piece of meat of the counter and ran out. Balbir was mad when he realised what had happened. He asked three other shopkeepers, who had seen the dog, to describe it. The shopkeepers really didn't want to help Balbir. So each of them made a statement which contained one truth and one lie.
Aman said - "The dog had black hair and a long tail".
Rita said - "The dog had a short tail and wore a collar."
Geeta said- "The dog had white hair and no collar."

1. How many different correct cases are possible?
A) 1 B) 2 C) 3 D)

2. Which pair of characteristics cannot appear together?
A) White hair & Collar B) Short tail & No collar
C) Black hair & Long tail D) White hair & No collar

3. Which of the following must be false?
A) Black hair & No collar B) White hair & Long tail
C) Black hair & Long tail D) Short tail & No collar

4. Based on the above statements, which of the following could be a correct description?
(a) The dog had white hair, short tail and no collar
(b) The dog had white hair, long tail and a collar
(c) The dog had black hair, long tail and a collar
(d) The dog had black hair, long tail and no collar

5. Which pair of features would make Rita's statement not possible?
A) Short tail & Wore a collar
B) Short tail & No collar
C) Long tail & Wore a collar
D) Black hair & Long tail

Answer: B) two possible valid combinations
Answer: D) White hair & No collar makes both parts of Geeta's statement true, which violates the "one truth, one lie" rule.
Answer: C) Black hair & Long tail. Because both parts of Aman's statement would be true, which violates the "one truth, one lie" rule.
Answer: B) two possible valid combinations: White hair, Long tail, Collar & Black hair, Short tail, No collar
Answer: A) Short tail & Wore a collar. Both parts of Rita's statement would be true, which violates the "one truth, one lie" rule.

Case I

Shopkeeper	Hair	Tail	Collar
Aman	Black Hair ✗	Long Tail ✓	—
Rita	Short Tail ✗	Yes Collar ✓	
Geeta	White Hair ✓	—	No Collar ✗

Case II

Shopkeeper	Hair	Tail	Collar
Aman	Black Hair ✓	Long Tail ✗	—
Rita	Short Tail ✓	Yes Collar ✗	
Geeta	White Hair ✗	—	No Collar ✓

CAT 2001 Six Teams Selection

6 groups for visiting different seminars are to be formed. A Group should include three or four only from seven persons. Among the seven are two women: Fiza and Kavita, and five men: Ram, Shyam, David, Peter and Rahim. Ram would not like to be in the group if Shyam is also selected. Shyam and Rahim want to be selected together in the group. Kavita would like to be in the group only if David is also there. David, if selected, would not like Peter in the group. Ram would like to be in the group only if Peter is also there. David insists that Fiza be selected in case he is there in the group.

1. How many different groups of three possible?
(a) 1 (b) 2 (c) 3 (d) 4

2. How many different groups of four possible?
(a) 1 (b) 2 (c) 3 (d) 4

3. Shyam is part of how many groups?
(a) 1 (b) 2 (c) 3 (d) 4

4. Fiza is part of how many groups?
(a) 5 (b) 6 (c) 3 (d) 4

5. Kavita is part of how many groups?
(a) 1 (b) 2 (c) 3 (d) 4

6. How many all-men groups possible?
(a) 1 (b) 2 (c) 3 (d) 4

R1 Ram ≠ Shyam
R2 Shyam ⇔ Rahim (both in or both out)
R3 Kavita → David (if Kavita in, David must be in)
R4 David ≠ Peter (cannot both be in same group)
R5 Ram → Peter (if Ram in, Peter must be too)
R6 David → Fiza (if David in, Fiza must be too)

1. (d) 4 – 4 valid groups of three.
2. (b) 2 – 2 valid groups of four.
3. (d) 4 – Shyam appears in 4 groups.
4. (a) 5 – Fiza appears in 5 groups
5. (a) 1 – Kavita appears in only 1 group.
6. (a) 1 – Only 1 all-men group ({Shyam, Rahim, Peter}).

Group	Size	Team Members
1	Three	{Shyam, Rahim, Fiza}
2	Three	{Shyam, Rahim, Peter}
3	Three	{Fiza, Kavita, David}
4	Three	{Fiza, Ram, Peter}
5	Four	{Shyam, Rahim, Fiza, David}
6	Four	{Shyam, Rahim, Fiza, Peter}

CAT 2001 Team Selection 8 members

A king has unflinching loyalty from eight of his ministers M1 to M8, but he has to select only four to make a cabinet committee. He decides to choose these four such that each selected person shares a liking with at least one of the other three selected. The selected persons must also hate at least one of the likings of any of the other three persons selected
M1 likes fishing and smoking, but hates gambling
M2 likes smoking and drinking, but hates fishing,
M3 likes gambling, but hates smoking,
M4 likes mountaineering , but hates drinking,
M5 likes drinking, but hates smoking and mountaineering
M6 likes fishing, but hates smoking and mountaineering
M7 likes gambling and mountaineering, but hates fishing,
M8 likes smoking and gambling, but hates mountaineering.

Easy

1. How many members hate smoking?
(a) 1 (b) 2 (c) 3 (d) 4
2. How many members like Mountaineering?
(a) 1 (b) 2 (c) 3 (d) 4
3. How many members like fishing?
(a) 1 (b) 2 (c) 3 (d) 4

CAT questions

4. If M1 is selected how many members cannot be selected? (a) 5 (b) 6 (c) 3 (d) 4

5. If M2 is selected which of the following cannot be selected? (a) M3 (b) M5 (c) M6 (d) M8

6. Who are the four people selected by the king?
(a) M1, M2, M5, M6 (b) M3, M4, M5, M6
(c) M4, M5, M6, M8 (d) M1, M2, M4, M7

(c) 3 members (M3, M5, M6)
(b) 2 members (M4, M7)
(b) 2 members (M1, M6)
(d) M2 likes smoking and drinking but hates fishing. M3, M4, M6, and M7 either don't share any likes or have likings M2 hates.
(d) If M1 and M8 are together, M8 (hates Mountaineering) needs another committee member (M4 or M7) who likes Mountaineering to satisfy M8's "hated liking" condition, which M1 does not provide. Without such a member, M8's condition cannot be met, making M8 generally difficult to include with M1.
(d) there is only 1 The valid team {M1, M2, M4, M7}.

Minister	Likes	Hates
M1	fishing, smoking	gambling
M2	smoking, drinking	fishing
M3	gambling	smoking
M4	mountaineering	drinking
M5	drinking	smoking, mountain
M6	fishing	smoking, mountain
M7	gambling, mountain	fishing
M8	smoking, gambling	mountain

CAT 2003 Team Selection

The Head of a newly formed government desires to appoint five of the six elected members A, B, C, D, E and F to portfolios of Home, Power , Defence, Telecom and Finance, F does not want any portfolio if D gets one of the five. C wants either Home or finance or no portfolio. B says that if D gets either Power or Telecom then she must get the other one. E insists on a portfolio if A gets one.

Q1. If C gets Home, D gets Power, A gets Defence, how many people can get Telecom?
A) 1 B) 2 C) 3 D) 0

Q2. If C gets Finance, D gets Telecom and A gets Home, how many people can get Defence?
A) 1 B) 2 C) 3 D) 4

Q3. If B gets Telecom, E gets Defence and A gets Home, how many people can get Power?
A) 1 B) 2 C) 3 D) 4

Q4. If D gets Power, how many people can get Defence?
A) 1 B) 2 C) 3 D) 4

Q5. If A gets Home and C gets Finance, then which is not a valid assignment for defence and Telecom?
(a) F-Defence, B-Power (b) E-Defence, B-Telecom
(c) D-Defence, E-Telecom (d) C-Defence, F-Telecom

Constraints Recap:

- F & D: F does not want any portfolio if D gets one. (If D assigned, F unassigned. If F assigned, D unassigned.)
- C's Preference: C wants either Home or Finance or no portfolio.
- B & D: If D gets either Power or Telecom, B must get the other one.
- E & A: E insists on a portfolio if A gets one. (If A assigned, E assigned.)

1. (A): 1 person B: With D getting Power, B must get Telecom due to their linked portfolios (Constraint 4). All other portfolios and necessary members are then assigned, leaving only B for Telecom.
2. (A): 1 person E: With D getting Telecom, B must get Power (Constraint 4). Since A gets Home, E must be assigned a portfolio (Constraint 5), and Defence is the only remaining option.
3. (B): 2 people (D or F): C cannot get Power (Constraint 3). Either D gets Power (forcing F unassigned) or F gets Power (forcing D unassigned), both of which create valid assignments.
4. (B): 2 people (A or E). Explanation: C cannot get Defence (Constraint 3). Both A and E can be validly assigned Defence, with the remaining portfolios assigned to the other and C.
5. (D): C's preference is violated as C can only have Home, Finance, or no portfolio.

CAT 2009 Race

H1, H2, H3 and H4 are four horses that participated in each of the four different races Race I-IV during an annual horse-racing event in Goa. Each horse is owned by a different owner among Rahul, Dharma, Dablu and Ritesh, in no particular order. None of the four horses finished at the same position in more than two of the four races. In each race the four horses were given ranks 1, 2, 3 and 4 according to the positions at which they finished in the race. It is also known that:

(i) In Race-I, H2 finished third and Ritesh's horse finished first. Interestingly, in Race-II, H2 finished first and Ritesh's horse finished third.
(ii) In Race-IV, H2 finished third and H3 finished fourth.
(iii) Dablu's horse finished at the same position in Race-I and Race-II, and also in Race-III and Race-IV.
(iv) In Race-IV, H1 and H3 interchanged the positions at which they had finished in Race-II.
(v) In Race-III, H3 finished fourth and H4 finished second.
(vi) Rahul's horse did not finish first in any of the four races.

1. Whose horse finished third in Race-I?
(a) Rahul (b) Ritesh (c) Dharma (d) Dablu

2. Whose horse finished third in Race-II?
(a) Rahul (b) Ritesh (c) Dharma (d) Dablu

3. Whose horse finished third in Race-III?
(a) Rahul (b) Ritesh (c) Dharma (d) Dablu

4. Who are the owners of H3 and H4 respectively?
(a) Ritesh and Rahul (b) Dablu and Ritesh
(c) Rahul and Dablu (d) Cannot be determined

5. Whose horse finished third in Race-IV?
(a) Rahul (b) Ritesh (c) Dharma (d) Dablu

6. If the horse with the lowest sum of ranks in the four races won a Jackpot of 1 crore, which horse won the Jackpot? (a) H1 (b) H2 (c) H3 (d) H4

1 (c) Dharma - H2 finished 3rd in Race-I
2 (b) Ritesh - H4 finished 3rd in Race-II
3 (a) Rahul - H1 finished 3rd in Race-III
4 (b) H3 = Dablu, H4 = Ritesh
5 (c) Dharma - H2 finished 3rd in Race-IV
6 (d) H4 - Lowest total rank = 7

Horse	Race-I	Race-II	Race-III	Race-IV	Owner	Total
H1	4	4	3	2	Rahul	13
H2	3	1	1	3	Dharma	8
H3	2	2	4	4	Dablu	12
H4	1	3	2	1	Ritesh	7

CAT 1999 Robot Coordinates

A robot moves on a coordinate plane as per the following set of instructions:
GOTO(x, y): The robot directly moves to the point (x, y) from its current position.
WALKX(p): The robot moves distance 'p' parallel to the X-axis. It moves in the positive X-direction if p is positive, and in the negative X-direction if p is negative.
WALKY(p): The robot moves distance 'p' parallel to the Y-axis. It moves in the positive Y-direction if p is positive, and in the negative Y-direction if p is negative.

Q1. The robot reaches (6, 6) after executing the following instructions:
(i) GOTO (x, y) (ii) WALKX(2) (iii) WALKY(4)
What was the robot's position after instruction (i)?
A) (2, 4) B) (4, 2) C) (–4, –2) D) Both B and C

Q2. If the use of the GOTO instruction is not allowed and the robot is currently at point (x, y) such that $x \neq 0$ and $y \neq 0$, what is the minimum number of instructions required to bring the robot to the origin (0, 0)?
A) 1 B) 2 C) 3 D) 4

Q3. A robot goes from point A(2, 6) to B(7, 6), then to C(2, –4), and finally back to A.
Which of the following points does not lie on the path of the robot? A) (2, 0) B) (3, 6) C) (0, 6) D) (4, 0)

Q4. A robot ends up at point (5, –1) after executing the following instructions:
(i) GOTO (x, y) (ii) WALKX(3) (iii) WALKY(–2)
What was the robot's position after instruction (i)?
A) (2, 1) B) (3, 1) C) (1, –3) D) (2, 0)

Q5. A robot moves from point P(–3, 2) to Q(4, 2), then to R(4, –5), and finally back to P. Which of the following points does not lie on the robot's path?
A) (4, –1) B) (0, 2) C) (–1, –5) D) (2, 2)

Q1. Answer: B. Let robot's position after GOTO = (a, b)
Then final = (a + 2, b + 4) = (6, 6) ⇒ a = 4, b = 2 → Position = (4, 2)

Q2. Answer: B. Without GOTO, only WALKX and WALKY are allowed.
Use WALKX(–x) and WALKY(–y) ⇒ total 2 steps

Q3. Answer: C Path:
A → B: y = 6, x ∈ [2,7]; B → C: move to (2, 6) then down to (2, –4)
C → A: vertical up to (2, 6). Only point (0, 6) is off all paths

Q4. Answer: A. Final = (a + 3, b – 2) = (5, –1) ⇒ a = 2, b = 1 → Position = (2, 1)
Q5. Answer: C Path: P → Q: y = 2, x ∈ [–3, 4]; Q → R: x = 4, y ∈ [–5, 2]; R → (–3, –5), then up to P; (–1, –5) is not on any of these segments

CAT 2000 Robot moves

There are three vessels: A, B, and C, with capacities of 5 liters, 3 liters, and 2 liters respectively.
A computer program can perform the following operations:
Drain(Y): Empties all the liquid in vessel Y.
Fill(X, Y): Transfers liquid from vessel Y into vessel X such that the amount withdrawn from Y equals the final amount in X.
Empty(X, Y): Transfers liquid from vessel Y into vessel X such that the amount left in Y equals the amount in X.

1. If C is full and operation Empty(A, C) is performed, how much liquid will C have after the operation?
A) 0 liters B) 1 liter C) 2 liters D) None of these

2. If B contains 2 liters and A contains 0 liters, what will be the state of vessels after operation Fill(A, B)?
A) A = 2, B = 0 B) A = 1, B = 1
C) A = 3, B = 0 D) A = 2, B = 1

3. If vessel C is full and Fill(A, C) is executed, how much liquid will be in vessel A?
A) 0 liters B) 1 liter C) 2 liters D) 5 liters

4. The following operations are performed in succession:
Fill(C, A); ? ; Fill(C, A)
What should the second operation be if after the three operations vessel A contains 1 liter of liquid?
A) Empty(C, B) B) Empty(B, C) C) Fill(C, B) D) Fill(B, C)

5. In addition to the three operations in the previous problem, a fourth operation Drain(A) is performed.
What operations should follow so that vessel A contains 4 liters of liquid?
A) Empty(B, A), Drain(C) B) Empty(B, A), Empty(C, A)
C) Fill(B, A), Fill(C, A) D) Fill(A, B), Fill(A, C)

1. B) 1 liter →C = 2L (full), A = 0L
Empty(A, C): transfer from C to A until C has same amount as A → C becomes 1L, A becomes 1L

2. A) Fill(A, B): transfer from B to A so that amount withdrawn from B = amount finally in A
B = 2L, A = 0L → A gets 2L, B becomes 0L

3. C) Fill(A, C): transfer from C to A
If C = 2L, A gets 2L, and C becomes 0L

4. D) After: Fill(C, A) → A = 3, C = 0
Then Fill(B, C): B to C → C = 2, B = 0
Then Fill(C, A): C to A → A = 3 - 2 = 1

5. D) Fill(A, B), Fill(A, C)
After Drain(A): A = 0, B = 2, C = 2
Fill(A, B): A = 2, B = 0
Fill(A, C): A = 4, C = 0 → Final A = 4L ✓

CAT 2019 Team Arrangement

Princess, Queen, Rani and Samragni were the four finalists in a dance competition. Ashman, Badal, Gagan and Dyu were the four music composers who individually assigned items to the dancers. Each dancer had to individually perform in two dance items assigned by the different composers. The first items performed by the four dancers were all assigned by different music composers. No dancer performed her second item before the performance of the first item by any other dancers. The dancers performed their second items in the same sequence of their performance of their first items.

The following additional facts are known.

i) No composer who assigned item to Princess, assigned any item to Queen.

ii) No composer who assigned item to Rani, assigned any item to Samragni.

iii) The first performance was by Princess; this item was assigned by Badal.

iv) The last performance was by Rani; this item was assigned by Gagan.

v) The items assigned by Ashman were performed consecutively.

vi) The number of performances between items assigned by each of the remaining composers was the same.

1. Who was second to perform her first item?
a) Princess b) Samragni c) Rani d) Queen

2. Who was third to perform her first item?
a) Princess b) Samragni c) Rani d) Queen

3. Composers who assigned item to Rani, did not assigned any item to which of the following?
a) Princess b) Samragni c) Rani d) Queen

4.The first performance was by?
a) Princess b) Samragni c) Rani d) Queen

5. The first performance was by Princess; this item was assigned by
a) Badal b) Ashman c) Dyu d) Gagan

6.The last performance was by?
a) Rani b) Samragni c) Princess d) Queen

7. The last performance was by Rani; this item was assigned by?
a) Gagan b) Ashman c) Dyu d) Badal

8. No composer who assigned item to Princess, assigned any item to ?
a) Queen b) Princess c) Samragni d) Rani

9. Which of the following is true?
A. The second performance was composed by Gagan.
B. The third performance was composed by Ashman.
C. The second performance was composed by Dyu.
D. The third performance was composed by Dyu.

10. Which of the following is FALSE?
A. Rani did not perform in any item composed by Badal.
B. Princess did not perform in any item composed by Dyu.
C. Samragni did not perform in any item composed by Ashman.
D. Queen did not perform in any item composed by Gagan

11. The sixth performance was composed by
A. Dyu B. Gagan C. Ashman D. Badal

12. Which pair of performances were composed by the same composer?
A. The second and the sixth
B. The third and the seventh
C. The first and the seventh
D. The first and the sixth

No.	Dancer	Composer
1	Princess	Badal
2	Samragni	Dyu
3	Queen	Gagan
4	Rani	Ashman
5	Princess	Ashman
6	Samragni	Badal
7	Queen	Dyu
8	Rani	Gagan

1. (b) Samragni – She performed second as per the performance order: Princess, Samragni, Queen, Rani.
2. (d) Queen – She was third in the first round of performances.
3. (b) Samragni – Rani's composers (Ashman, Gagan) do not overlap with Samragni's (Dyu, Badal).
4. (a) Princess – She is explicitly stated as the first performer.
5. (a) Badal – Composer for Princess's first performance is Badal.
6. (a) Rani – Rani's second performance is the 8th and last.
7. (a) Gagan – Rani's second performance (8th) was assigned by Gagan.
8. (a) Queen – Princess's composers (Badal, Ashman) do not appear for Queen.
9. (C) The second performance was composed by Dyu – Samragni performed second, composer was Dyu.
10. (D) Queen did not perform in any item composed by Gagan – This is false; Queen's first item (3rd) was composed by Gagan.
11. (D) Badal – 6th performance was Samragni's second item, composer was Badal.
12. (B) The third and the seventh – Both were composed by Dyu (Queen and Queen).

CAT 1994 Languages Arrangement

The tribal community on the island of Lexicophobos has recently developed a new language with a very limited vocabulary. Their words are categorized into three groups:
Bingoes: Grumbs, Harrumphs, Ihavitoo
Cingoes: Ihavitoo, Jingongo, Koolodo
Dingoes: Lovitoo, Metoo, Nana

Their grammar rules are as follows:

- Every sentence must contain exactly five words.
- Each sentence must have: 2 Bingoes, 1 Cingo, and 2 Dingoes.
- If Grumbs is used in a sentence, Ihavitoo must also be used, and vice versa.
- Koolodo can be used only if Lovitoo is also present in the sentence.

1. Which of the following is a valid sentence according to the grammar rules?
A) Grumbs Harrumphs Ihavitoo Metoo Nana
B) Grumbs Harrumphs Jingongo Metoo Nana
C) Grumbs Ihavitoo Koolodo Nana Lovitoo
D) Harrumphs Ihavitoo Koolodo Metoo Nana

2. If Koolodo is used in a sentence, which of the following must also be included?
A) Grumbs B) Jingongo C) Lovitoo D) Ihavitoo

3. Which of the following cannot be used as a Cingo?
A) Ihavitoo B) Jingongo C) Koolodo D) Grumbs

4. If Grumbs is used in a sentence, what else must be present?
A) Harrumphs B) Koolodo C) Ihavitoo D) Lovitoo

5. Which of the following sets of words cannot form a grammatically correct sentence?
A) Grumbs and Harrumphs as the Bingoes, and Ihavitoo as the Cingo
B) Harrumphs and Ihavitoo as the Bingoes
C) Grumbs and Ihavitoo as the Bingoes, and Lovitoo and Nana as the Dingoes
D) Metoo and Nana as the Dingoes, Ihavitoo as the Cingo

6. If Grumbs and Harrumphs are the Bingoes in a sentence and no grammar rule is violated, which of the following must be true?
I. Ihavitoo is the Cingo
II. Lovitoo is one of the Dingoes
III. Either Lovitoo or Metoo must be used as (or both) Dingoes
A) Only I B) Only II C) Only III D) I and III only

7. Which of the following is a valid sentence according to all grammar rules?
A) Grumbs Harrumphs Ihavitoo Lovitoo Metoo
B) Grumbs Harrumphs Ihavitoo Jingongo Lovitoo
C) Harrumphs Ihavitoo Jingongo Lovitoo Metoo
D) Grumbs Ihavitoo Koolodo Metoo Nana

8. If a sentence contains Grumbs as one of the Bingoes and no grammar rule is violated, which of the following must be true?
A) Harrumphs must be the second Bingo
B) Ihavitoo must be present
C) Lovitoo must be used
D) All three Bingoes (Grumbs, Harrumphs, Ihavitoo) are used

9. How many combinations includes Grumbs?
A) 8 B) 9 C) 10 D) 11

10. How many combinations includes Lovitoo?
A) 8 B) 9 C) 10 D) 11

Answers
1. Answer: A. 2 Bingoes: Grumbs, Harrumphs; 1 Cingo: Ihavitoo; 2 Dingoes: Metoo, Nana Grumbs ⇒ Ihavitoo used; Sentence = 5 words No Koolodo used without Lovitoo
2. Answer: C: Koolodo can be used only if Lovitoo is present (Rule 4)
3. Answer: D: Grumbs is a Bingo, not a Cingo.
4. Answer: C: Rule 3 says: Grumbs ⇒ Ihavitoo must also be present.
5. Answer: B: Harrumphs and Ihavitoo as Bingoes → violates word/type rule (Ihavitoo can't be both Bingo and Cingo)
6. Answer: D) I & III only: Grumbs → Ihavitoo must be used; Ihavitoo becomes Cingo; Dingoes can be Lovitoo/Metoo/Nana
7. Answer: A) Grumbs Harrumphs Ihavitoo Lovitoo Metoo → follows all grammar rules
Only Ihavitoo must be used (not necessarily as Bingo)
8. Answer B): (This aligns with the rule that Grumbs requires Ihavitoo, regardless of whether Ihavitoo is a Bingo or Cingo.)
9. Answer A): 8 Combinations Includes Grumbs
10. Answer C: 10 combinations

Combo #	Bingoes	Cingo	Dingoes
1	Grumbs, Ihavitoo	Jingongo	Lovitoo, Metoo
2	Grumbs, Ihavitoo	Jingongo	Lovitoo, Nana
3	Grumbs, Ihavitoo	Jingongo	Metoo, Nana
4	Grumbs, Ihavitoo	Koolodo	Lovitoo, Metoo
5	Grumbs, Ihavitoo	Koolodo	Lovitoo, Nana
6	Grumbs, Harrumphs	Ihavitoo	Lovitoo, Metoo
7	Grumbs, Harrumphs	Ihavitoo	Lovitoo, Nana
8	Grumbs, Harrumphs	Ihavitoo	Metoo, Nana
9	Harrumphs, Ihavitoo	Jingongo	Lovitoo, Metoo
10	Harrumphs, Ihavitoo	Jingongo	Lovitoo, Nana
11	Harrumphs, Ihavitoo	Jingongo	Metoo, Nana
12	Harrumphs, Ihavitoo	Koolodo	Lovitoo, Metoo
13	Harrumphs, Ihavitoo	Koolodo	Lovitoo, Nana

CAT 2017 Rating Chart Multiple

Answer the following question based on the information given below.

A tea taster was assigned to rate teas from six different locations – Munnar, Wayanand, Ooty, Darjeeling, Assam and Himachal. These teas were placed in six cups, numbered 1 to 6, not necessarily in the same order. The tea taster was asked to rate these teas on the strength of their flavour on a scale of 1 to 10. He gave a unique integer rating to each tea. Some other information is given below:

1. Cup 6 contained tea from Himachal.
2. Tea from Ooty got the highest rating, but it was not in Cup 3.
3. The rating of tea in Cup 3 was double the rating of the tea in Cup 5.
4. Only two cups got ratings in even numbers.
5. Cup 2 got the minimum rating and this rating was an even number.
6. Tea in Cup 3 got a higher rating than that in Cup 1.
7. The rating of tea from Wayanad was more than the rating of tea from Munnar, but less than that from Assam.

Questions based on Instructions (Before making the Table)

1. Among Assam, Wayanad, and Munnar, who got the highest rating? A) Assam B) Wayanad C) Munnar D) Himachal
2. What could be the rating of Cup 2?

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

3. What could be the rating pair of Cup 3 and Cup 5?

A) 3,6 B) 1,5 C) 4,8 D) 2,5

After Entering All Data into the Table

4. What is the rating of Cup 4? A) 7 B) 6 C) 10 D) 5
5. Which Cup got a rating of 5? A) Cup 1 B) Cup 3 C) Cup 5 D) Cup 6
6. Which cup number and its rating are the same? A) Cup 1 = 1 B) Cup 2 = 2 C) Cup 3 = 3 D) Cup 5 = 5
7. What is the rating of the cup that contains tea from Himachal (Cup 6)? A) 6 B) 10 C) 7 D) 3

CAT Questions

8. What was the second highest rating given?
9. What was the number of the cup that contained tea from Ooty?

10. If the tea from Munnar did not get the minimum rating, what was the rating of the tea from Wayanad?

A. 3 B. 5 C. 1 D. 6

11. If cups containing teas from Wayanad and Ooty had consecutive numbers, which of the following statements may be true?

A. Cup 5 contains tea from Assam
B. Cup 1 contains tea from Darjeeling
C. Tea from Wayanad has got a rating of 6
D. Tea from Darjeeling got the minimum rating

Table at the end of data entry

Cup	Rating	Tea
1	5	?
2	2	?
3	6	?
4	10	Ooty
5	3	?
6	7	Himachal

Rating Assam > Wayanad > Munnar

Easy questions

1. Answer A: Assam has rating 6, Wayanad has 5, and Munnar has 3 → Assam is highest.
2. Answer B: Clue says Cup 2 got the minimum and it's even → must be 2.
3. Answer A: Cup 5 = 3, Cup 3 = 6 satisfies Cup 3 = 2 × Cup 5 → valid pair.
4. Answer C: Cup 4 has tea from Ooty which got highest rating → 10.
5. Answer A: Cup 1 has rating 5 as per final table.
6. Answer B: Cup 2 has rating 2 → number and rating are same.
7. Answer C: Cup 6 = Himachal, and its rating is 7.

CAT Questions

8. Answer B: Ratings used were 2, 3, 5, 6, 7, 10 → second highest is 7.

Final table with all possible combinations

Cup	Rating	Case 1	Case 2	Case 3	Case 4
1	5	Wayanad	Wayanad	Darjeeling	Assam
2	2	Darjeeling	Munnar	Munnar	Munnar
3	6	Assam	Assam	Assam	Darjeeling
4	10	Ooty	Ooty	Ooty	Ooty
5	3	Munnar	Darjeeling	Wayanad	Wayanad
6	7	Himachal	Himachal	Himachal	Himachal

9. Answer C: Ooty has rating 10 and is placed in Cup 4.
10. Answer B: If Munnar ≠ min rating Case 1 (i.e., not 2), then Munnar = 3, Wayanad = 5, Assam = 6 → Wayanad rating = 5.
11. Answer B: In the alternative setup Case 3, 4 with Wayanad and Ooty in consecutive cups, Cup 1 = Darjeeling becomes a valid possible configuration.

END