



Puzzles

ANALYTICAL REASONING · CONCEPT BOOK

Floors, boxes and grids — one enumeration method that proves the arrangement instead of guessing it, and a printed convention under which every answer is checkable.

Concept · Worked Examples · 200 Questions

Contents

1 chapter, 5 concepts, 25 worked examples and 381 questions — then a back section you will use more than any single chapter. Everything below is on the page the dots point to.

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REFERENCE, AND HOW TO USE THE PAPER

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How this book works

Most books on this section open by telling you a formula. This one opens each idea with a question you cannot yet answer. You will try it, you will stall, and then the idea arrives. That order is deliberate and it is the reason the idea sticks.

THE EXAMPLES FADE. The first worked example under every concept shows every step. The second leaves the last step to you. The third leaves two. By the fifth you are working alone. The empty box under a faded example is not a printing error — it is your turn, and it is deliberately unruled. Rough working goes sideways, cancels, and stacks a step; printed lines fight all three. Write in it however you actually work.

THREE LEVELS, MARKED HONESTLY. Every question carries L1, L2 or L3. L1 lands in two steps or fewer. L2 takes three or four. L3 takes five or six. Nothing is mislabelled to flatter you.

SPOT THE SLIP. Each concept carries one solution that is worked out neatly, confidently, and wrongly. Find the bad step before you read the verdict. These are not invented mistakes — every one of them is an error our own students made in a real mock.

WHERE THE SOLUTIONS ARE. Answers to everything in this volume are in its Solutions Companion, worked in full. The short answer key at the back of this book is for checking, not for learning. If you got a question wrong, the Companion is where you go.

CHAPTER 1

The Grid

Floors, boxes and matching puzzles carry more marks per minute than any other arrangement type, because the work is bookkeeping rather than insight. Nothing here faces anywhere: there is no left, no right, and no sitter whose sides you have to read. What replaces them is the one discipline this whole book is about — never writing down something you have not been told, and never stopping at an arrangement that merely fits.

BEFORE YOU READ ANYTHING ELSE — TRY THIS

Five people — Bala, Chitra, Devi, Ehsan and Gita — live on five floors, floor 1 the lowest. Devi

lives on the topmost floor. Bala lives immediately above Chitra. Ehsan lives on the lowest floor. Chitra does not live on floor 2. Who lives on floor 4?

You looked for the clue that names floor 4. There isn't one. A stack is solved by elimination, not by lookup, and the fourth floor is decided by what cannot go anywhere else.

Devi is on 5 and Ehsan on 1, so Bala, Chitra and Gita take floors 2, 3 and 4. Bala immediately above Chitra fits as 2 and 3 or as 3 and 4. The last clue does not place anybody — it removes one: Chitra is not on 2, so the pair is 3 and 4, Gita takes what is left on 2, and floor 4 is Bala.

THE WAY OUT, IN FOUR LINES

Fix what the clues state outright

An 'immediately above' pair is one block

A negative clue REMOVES, it does not place

Then read the answer off what is left

Devi = 5, Ehsan = 1, so 2, 3 and 4 are left

(Chitra, Bala) = (2, 3) or (3, 4), never split

Chitra is not 2, so the pair is 3 and 4

Gita takes 2, and floor 4 = Bala

Bala — and the reader who went looking for a clue naming floor 4 never found one, because there isn't one.

HOW EVERY SET IN THIS CHAPTER IS GRADED

One value per person per column, and one person per value. Nothing here is seated, so left, right, above and below never apply.

Levels are numbered 1 upward: level 1 is the lowest and level N the highest. 'Above' means a higher-numbered level and 'below' a lower one. Nothing in a stack faces anywhere, so left and right never apply. 'Immediately above' means exactly one level higher. 'Exactly N levels lie between A and B' counts the levels STRICTLY between them: levels 2 and 5 have two levels between them, not three.

Each set repeats this in one line. This is the full rule, and it is the one your answers are marked against.

1.1 Floors, and what 'above' really says

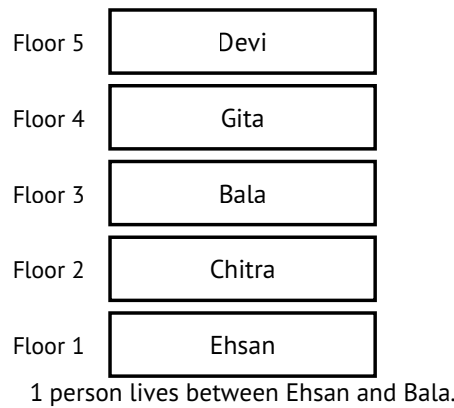
Levels are numbered 1 upward. Floor 1 is the lowest and floor N the highest, and that single sentence is the whole convention — but it is worth checking on every paper, because a minority of questions number downward and say so quietly.

The distinction that costs marks is between 'above' and 'immediately above'. 'Above' names every floor higher than yours; on a five-floor block, three people are above the person on floor 2. 'Immediately above' names exactly one. A clue saying Bala is above Chitra places almost nothing; a clue saying Bala is immediately above Chitra welds them together into a block you can slide up and down as a unit.

THE METHOD

Number upward, once	floor 1 = lowest · floor N = highest
'Immediately above' is exactly one	level(A) = level(B) + 1
'Above' is every higher floor	above = EVERY higher-numbered level, not only the next
Weld the immediates into blocks first	a 2-floor block fits N – 1 ways, so N = 5 leaves 4

Devi is highest · Ehsan is lowest



Levels are numbered upward; 'above' means a higher number.

Ex 1 Four people live on four floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Girija, Jagat, Fatima and Ila. Who lives immediately above Jagat? *worked through*

1. $2 + 1 = 3$

2. = Fatima

Answer Fatima

Ex 2 Four people live on four floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Vinod, Girija, Arvind and Bhavani. Who lives on the topmost floor? *finish the last step*

1. position = 1

Answer _____

Ex 3 Five people — Chitra, Prakash, Rukmini, Tanvi and Yamini — live on five floors of a building, floor 1 being the lowest. Tanvi is on floor 4. Rukmini is on floor 5. Chitra is on floor 1. Yamini is on floor 3. Which floor does Prakash live on? *finish the last two steps*

Answer _____

Ex 4 Four people — Chetna, Jagat, Tanvi and Ujwala — live on four floors of a building, floor 1 being the lowest. Chetna is on floor 1. Tanvi is on floor 2. Jagat is somewhere above Ujwala. Who lives immediately above Tanvi? *the entry is given — carry it home*

1. $2 + 1 = 3$

Answer _____

Ex 5 Five people — Arvind, Bhavani, Girija, Sudha and Tanvi — live on five floors of a building, floor 1 being the lowest. Girija is on floor 2. Girija is somewhere above Bhavani. Sudha is immediately above Arvind. Arvind is on floor 3. Who lives on the topmost floor? *on your own*

Answer _____

SPOT THE SLIP

Five live on five floors, floor 1 lowest. Bala is above Chitra. Chitra is on floor 2. Who is on floor 3?

⋮ Bala is above Chitra and Chitra is on floor 2, so Bala is on floor 3.

...which gives Bala. That answer is wrong. Find the step where it goes wrong before you read on.

The slip: read 'above' as 'immediately above'. Above names floors 3, 4 and 5 — three possibilities, not one. Floor 3 cannot be determined from these two clues.

DRILL 1.1 – FLOORS, AND WHAT 'ABOVE' REALLY SAYS

20 questions

1. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Fatima, Dhruv, Chetna, Girija and Chitra. Which floor does Girija live on?
(A) 5 (B) 4 (C) 2 (D) 3
2. [1] Six people live on six floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Hiren, Neelam, Manoj, Jagat, Kiran and Dhruv. How many people live above Jagat?
(A) 0 (B) 2 (C) 1 (D) 3
3. [1] Four people live on four floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Jagat, Girija, Prakash and Rukmini. Who lives on the topmost floor?
(A) Girija (B) Jagat (C) Prakash (D) Rukmini
4. [1] Four people live on four floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Arvind, Eshwar, Neelam and Vinod. Who lives immediately above Arvind?
(A) Eshwar (B) Vinod (C) Chetna (D) Neelam
5. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Jagat, Leela, Arvind, Chetna and Zubin. Which floor does Leela live on?
(A) 4 (B) 1 (C) 3 (D) 2
6. [1] Six people live on six floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Chetna, Neelam, Chitra, Leela, Vinod and Fatima. How many people live above Chetna?
(A) 2 (B) 4 (C) 5 (D) 3
7. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Prakash, Jagat, Hiren, Chetna and Ujwala. Who lives on the topmost floor?
(A) Jagat (B) Ujwala (C) Hiren (D) Prakash
8. [1] Six people live on six floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Dhruv, Kiran, Leela, Ila, Omprakash and Hiren. Who lives immediately above Kiran?
(A) Dhruv (B) Ila (C) Omprakash (D) Leela
9. [2] Five people — Arvind, Chitra, Fatima, Girija and Tanvi — live on five floors of a building, floor 1 being the lowest. Chitra is on floor 4. Arvind is immediately above Girija. Tanvi is on floor 1. Who lives immediately above Tanvi?
(A) Fatima (B) Chitra (C) Girija (D) Arvind
10. [2] Four people — Chetna, Leela, Tanvi and Yamini — live on four floors of a building, floor 1 being the

lowest. Leela is on floor 3. Chetna is somewhere above Leela. Yamini is somewhere above Tanvi. Which floor does Tanvi live on?

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

11. [L2] Four people — Bhavani, Dhruv, Girija and Jagat — live on four floors of a building, floor 1 being the lowest. Girija is somewhere above Dhruv. Bhavani is on floor 4. Girija is immediately above Jagat. Which floor does Dhruv live on?

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

12. [L2] Four people — Fatima, Hiren, Rukmini and Sudha — live on four floors of a building, floor 1 being the lowest. Rukmini is somewhere above Fatima. Sudha is on floor 3. Sudha is immediately above Rukmini. Who lives on the topmost floor?

- (A) Sudha (B) Fatima (C) Hiren (D) Rukmini

13. [L2] Four people — Eshwar, Hiren, Jagat and Yamini — live on four floors of a building, floor 1 being the lowest. Eshwar is immediately above Yamini. Yamini is on floor 3. Hiren is on floor 1. Who lives on the topmost floor?

- (A) Eshwar (B) Hiren (C) Yamini (D) Jagat

14. [L2] Four people — Chetna, Girija, Omprakash and Tanvi — live on four floors of a building, floor 1 being the lowest. Girija is immediately above Omprakash. Chetna is on floor 2. Which floor does Tanvi live on?

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

15. [L2] Four people — Bhavani, Hiren, Kiran and Leela — live on four floors of a building, floor 1 being the lowest. Bhavani is on floor 4. Kiran is somewhere above Hiren. Leela is on floor 1. Who lives immediately above Leela?

- (A) Bhavani (B) Hiren (C) Chetna (D) Kiran

16. [L2] Four people — Hiren, Manoj, Sudha and Zubin — live on four floors of a building, floor 1 being the lowest. Zubin is immediately above Sudha. Hiren is on floor 3. How many people live above Sudha?

- (A) 0 (B) 1 (C) 3 (D) 2

17. [L3] Five people — Arvind, Ila, Jagat, Kiran and Manoj — live on five floors of a building, floor 1 being the lowest. Arvind is somewhere above Ila. Manoj is on floor 4. Jagat is immediately above Kiran. Kiran is on floor 1. Who lives on the topmost floor?

- (A) Ila (B) Arvind (C) Jagat (D) Kiran

18. [L3] Four people — Chitra, Girija, Leela and Rukmini — live on four floors of a building, floor 1 being the lowest. Chitra is on floor 1. Girija is on floor 2. Leela is on floor 4. How many people live above Rukmini?

- (A) 3 (B) 1 (C) 2 (D) 0

19. [L3] Six people — Chetna, Fatima, Hiren, Omprakash, Rukmini and Tanvi — live on six floors of a building, floor 1 being the lowest. Chetna is on floor 6. Hiren is immediately above Omprakash. Tanvi is on floor 2. Chetna is immediately above Rukmini. Who lives immediately above Tanvi?

- (A) Fatima (B) Omprakash (C) Rukmini (D) Hiren

20. [L3] Five people — Arvind, Eshwar, Hiren, Leela and Ujwala — live on five floors of a building, floor 1 being the lowest. Ujwala is on floor 3. Ujwala is immediately above Hiren. Arvind is on floor 5. Eshwar is somewhere above Ujwala. Which floor does Leela live on?

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

1.2 Boxes, and counting from both ends

A stack of boxes is a block of flats with a different noun. Everything from the previous section applies

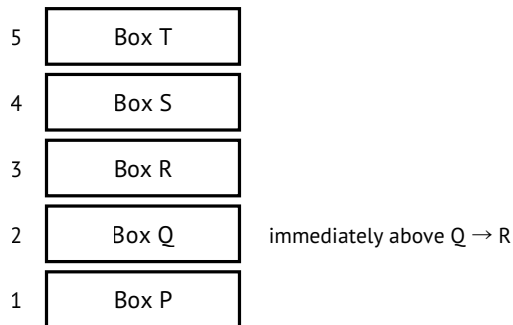
unchanged, and the only new habit is the counting clue.

'Three boxes lie above Box Q' does not tell you where Q is until you know how many boxes there are — but the moment you do, it pins Q exactly. In a stack of seven, three above puts Q on level 4, immediately and with no case work. These clues are the strongest in the whole chapter and students routinely read past them looking for something that names a level.

Count from whichever end the clue gives you and convert once: if k lie above in a stack of N , the item is on $N - k$.

THE METHOD

A stack of boxes is a stack of floors	level = position, whatever the noun
A count from the top pins a level	k above in N total means level = $N - k$
A count from the bottom does too	k below means level $k + 1$



Above Q: R, S, T — only R is immediately above.

'Immediately above' is one level. 'Above' is every level.

Ex 1 Five people live on five floors of a building, floor 1 being the lowest. From the lowest *worked through* floor upward they are: Jagat, Chetna, Girija, Leela and Kiran. How many people live above Kiran?

1. $5 - 5 = 0$

2. $= 0$

Answer 0

Ex 2 Four people live on four floors of a building, floor 1 being the lowest. From the lowest *finish the last step* floor upward they are: Zubin, Fatima, Prakash and Hiren. Who lives immediately above Prakash?

1. $3 + 1 = 4$

Answer _____

Ex 3 Five people — Chetna, Fatima, Ila, Manoj and Neelam — live on five floors of a *finish the last two steps* building, floor 1 being the lowest. Manoj is on floor 5. Ila is immediately above Chetna. Neelam is on floor 1. Ila is on floor 3. Who lives immediately above Ila?

Answer _____

Ex 4 Four people — Dhruv, Eshwar, Ujwala and Vinod — live on four floors of a building, floor 1 being the lowest. Vinod is on floor 1. Eshwar is immediately above Ujwala. Eshwar is on floor 4. Who lives immediately above Vinod? *the entry is given — carry it home*

1. $1 + 1 = 2$

Answer _____

Ex 5 Five people — Fatima, Hiren, Manoj, Neelam and Prakash — live on five floors of a building, floor 1 being the lowest. Prakash is on floor 3. Neelam is on floor 2. Fatima is somewhere above Prakash. Hiren is on floor 5. How many people live above Manoj? *on your own*

Answer _____

SPOT THE SLIP

Seven boxes are stacked. Three boxes lie above Box Q. Which level is Box Q on?

⋮ Three boxes above means Box Q is the third one, so Q is on level 3.

...which gives 3. That answer is wrong. Find the step where it goes wrong before you read on.

The slip: read a count as a position. Three above, in a stack of seven, puts Q on $7 - 3 = 4$.

DRILL 1.2 – BOXES, AND COUNTING FROM BOTH ENDS

20 questions

1. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Arvind, Eshwar, Chitra, Jagat and Zubin. Who lives immediately above Jagat?

(A) Arvind (B) Chitra (C) Zubin (D) Eshwar

2. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Dhruv, Fatima, Manoj, Girija and Bhavani. Who lives on the lowest floor?

(A) Fatima (B) Girija (C) Manoj (D) Dhruv

3. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Neelam, Tanvi, Dhruv, Chitra and Manoj. How many people live above Dhruv?

(A) 2 (B) 1 (C) 3 (D) 0

READ THE DATA BELOW – QUESTIONS 4–5

Four people live on four floors of a building, floor 1 being the lowest.

4. [1] From the lowest floor upward they are: Yamini, Dhruv, Prakash and Neelam. Who lives immediately above Prakash?

(A) Dhruv (B) Yamini (C) Chetna (D) Neelam

5. [1] From the lowest floor upward they are: Yamini, Leela, Vinod and Omprakash. Who lives on the lowest floor?

(A) Omprakash (B) Vinod (C) Yamini (D) Leela

6. [1] Six people live on six floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Manoj, Zubin, Bhavani, Vinod, Tanvi and Arvind. How many floors are there between Manoj and

Arvind?

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

7. [1] Five people live on five floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Ila, Yamini, Sudha, Chitra and Vinod. How many people live above Yamini?

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

8. [1] Four people live on four floors of a building, floor 1 being the lowest. From the lowest floor upward they are: Sudha, Tanvi, Yamini and Neelam. Who lives immediately above Yamini?

- (A) Neelam (B) Chetna (C) Sudha (D) Tanvi

9. [2] Five people — Chitra, Jagat, Kiran, Tanvi and Ujwala — live on five floors of a building, floor 1 being the lowest. Tanvi is immediately above Jagat. Ujwala is on floor 3. Chitra is on floor 1. Who lives immediately above Chitra?

- (A) Tanvi (B) Ujwala (C) Kiran (D) Jagat

10. [2] Four people — Dhruv, Manoj, Sudha and Yamini — live on four floors of a building, floor 1 being the lowest. Manoj is on floor 3. Dhruv is immediately above Sudha. Who lives on the lowest floor?

- (A) Dhruv (B) Sudha (C) Yamini (D) Manoj

11. [2] Four people — Bhavani, Chetna, Eshwar and Jagat — live on four floors of a building, floor 1 being the lowest. Bhavani is on floor 3. Jagat is somewhere above Chetna. Eshwar is on floor 1. Who lives immediately above Eshwar?

- (A) Dhruv (B) Bhavani (C) Chetna (D) Jagat

12. [2] Five people — Arvind, Ila, Neelam, Yamini and Zubin — live on five floors of a building, floor 1 being the lowest. Arvind is on floor 5. Neelam is on floor 2. Yamini is immediately above Ila. Who lives on the lowest floor?

- (A) Yamini (B) Neelam (C) Zubin (D) Ila

13. [2] Five people — Eshwar, Leela, Omprakash, Yamini and Zubin — live on five floors of a building, floor 1 being the lowest. Eshwar is immediately above Zubin. Leela is on floor 5. Yamini is on floor 3. Who lives on the lowest floor?

- (A) Zubin (B) Eshwar (C) Yamini (D) Omprakash

14. [2] Four people — Ila, Jagat, Neelam and Prakash — live on four floors of a building, floor 1 being the lowest. Jagat is on floor 3. Jagat is immediately above Ila. Neelam is somewhere above Ila. Who lives on the lowest floor?

- (A) Prakash (B) Neelam (C) Jagat (D) Ila

15. [2] Four people — Chetna, Eshwar, Ila and Yamini — live on four floors of a building, floor 1 being the lowest. Ila is on floor 2. Eshwar is immediately above Yamini. Who lives on the lowest floor?

- (A) Eshwar (B) Ila (C) Yamini (D) Chetna

16. [2] Four people — Hiren, Kiran, Neelam and Vinod — live on four floors of a building, floor 1 being the lowest. Vinod is on floor 2. Vinod is immediately above Hiren. Kiran is on floor 4. Who lives immediately above Vinod?

- (A) Hiren (B) Chetna (C) Neelam (D) Kiran

17. [3] Four people — Eshwar, Hiren, Ila and Neelam — live on four floors of a building, floor 1 being the lowest. Neelam is somewhere above Eshwar. Eshwar is on floor 2. Hiren is somewhere above Neelam. How many people live above Ila?

- (A) 3 (B) 0 (C) 1 (D) 2

18. [3] Four people — Girija, Kiran, Tanvi and Zubin — live on four floors of a building, floor 1 being the lowest. Kiran is on floor 4. Girija is immediately above Tanvi. Girija is on floor 2. How many people live above Zubin?

- (A) 3 (B) 1 (C) 0 (D) 2

19. $\square$ Five people — Bhavani, Dhruv, Fatima, Jagat and Sudha — live on five floors of a building, floor 1 being the lowest. Sudha is on floor 2. Jagat is on floor 4. Dhruv is immediately above Jagat. Sudha is somewhere above Fatima. Who lives on the lowest floor?

- (A) Fatima (B) Sudha (C) Jagat (D) Bhavani

20. $\square$ Four people — Kiran, Manoj, Sudha and Tanvi — live on four floors of a building, floor 1 being the lowest. Kiran is somewhere above Manoj. Sudha is on floor 4. Tanvi is on floor 2. How many people live above Manoj?

- (A) 2 (B) 3 (C) 0 (D) 1

1.3 Professions and cities: the matching grid

Here there is no arrangement at all. Nobody is seated, nothing is stacked, and there is no first or last. There are people and there are columns, and each person takes exactly one value from each column while each value goes to exactly one person.

Draw the grid. Every negative clue — 'the vet does not live in Mysore' — crosses out one cell, and crossing out is real progress even though it places nobody. When a row has one cell left, that is a placement; when a column has one cell left, that is also a placement, and students routinely watch the rows and forget the columns.

THE METHOD

One value per person per column	1 tick per row = 1 tick per column
A negative clue crosses out a cell	it places nobody: one cell gets ×, and that is progress
One cell left in a row OR a column is a placement	1 blank left in a row = a tick; watch columns too
A holder clue costs a step	find who, then read across = 2 steps, not 1

	Cook	Vet	Pilot
Bala	✓	×	×
Chitra	×	✓	×
Devi	×	×	✓

One tick per row and one per column — always.

An assignment grid has no left, no right and no order.

Ex 1 Five people live on five floors of a building, floor 1 being the lowest. From the lowest *worked through* floor upward they are: Tanvi, Bhavani, Girija, Chetna and Dhruv. Who lives immediately above Girija?

1. $3 + 1 = 4$

2. = Chetna

Answer Chetna

Ex 2 Five people live on five floors of a building, floor 1 being the lowest. From the lowest *finish the last step* floor upward they are: Eshwar, Girija, Hiren, Ila and Leela. Which floor does Girija live on?

1. $1 + 1 = 2$

Puzzles

The grid, the order, the box — every puzzle shape CLAT sets, and the one way to open each of them.

You have just read 10 of 52 pages.

This sample ends here. The rest of the book does not.

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