ATMA Analytical Reasoning Skills Sample Paper – 9

Duration: 60 Minutes **Maximum Marks: 60**

Instructions

- This paper contains **60** Multiple Choice Questions (Single Correct Answer) in two parts (Part I and Part II), modelled on the Analytical Reasoning Skills portion of **ATMA** entrance.
- Each correct answer carries **+1 marks**. There is **a penalty of** 0.25 **mark** for each incorrect answer; unattempted questions carry 0.
- Only **one** option is correct. Choose carefully.
- Syllabus level: **Logical reasoning & data interpretation (ATMA Analytical Reasoning Skills)**
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Part I: Analytical Reasoning Skills

Q1. Find the next term in the series: $2,\ 5,\ 11,\ 23,\ 47,\ ?$

(A) 91

(B) 93

(C) 95

(D) 96

Q2. Find the next term in the letter series: B, D, G, K, P, ?

(A) T

(B) U

(C) W

(D) V

Q3. Cobbler : Shoes :: Mason : ?

(A) Cloth

(B) Wall

(C) Wood

(D) Iron

Q4. $6 : 43 :: 8 :?$ (apply the same rule that takes 6 to 43).

(A) 73

(B) 71

(C) 65

(D) 72

Q5. Three of the following four numbers share a common property. Which one does **not** belong to the group?

(A) 13

(B) 17

(C) 21

(D) 23

Q6. In a certain code, each letter is replaced by the letter **two places ahead** of it in the alphabet (so A→C, B→D, . . . , Y→A, Z→B), *except* that every **vowel** (A, E, I, O, U) in the original word is instead replaced by the digit **0**. Using this rule, how is the word **MODEL** written?

(A) O0FGN

(B) O0F0N

(C) O0FFN

(D) 0OF0N

Q7. Using the *same* rule as in Q6 (each consonant shifts two letters ahead, A→C … Y→A, Z→B; every vowel becomes the digit 0), how is the word **QUEST** written?

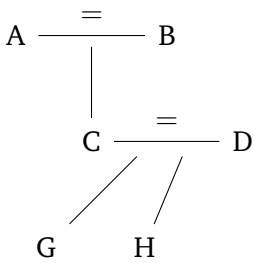
(A) S0G0V

(B) S0EUV

(C) S0FTV

(D) S00UV

Q8. Study the family tree below, where a double line "=" joins a married couple and a downward line joins a parent to a child. How is **H** related to **A**?



(A, B are a married couple;
C is their daughter;
C is married to D;
G and H are children of C and D)

(A) Grandchild

(B) Son

(C) Niece

(D) Daughter

Q9. Pointing to a photograph, Meera said, "He is the son of the only brother of my father." How is the man in the photograph related to Meera?

(A) Brother

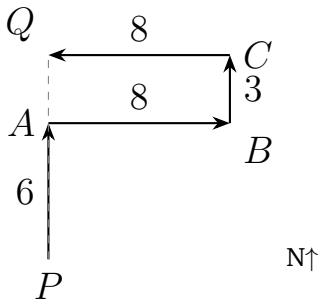
(B) Uncle

(C) Cousin

(D) Nephew

Q10. A cyclist starts at point P, rides 6 km North to A, then 8 km East to B, then 3 km North to C, and finally 8 km West to reach Q. The route is

shown below. What is the straight-line distance between P and Q, and in which direction does Q lie from P?



(A) 11 km, North-East

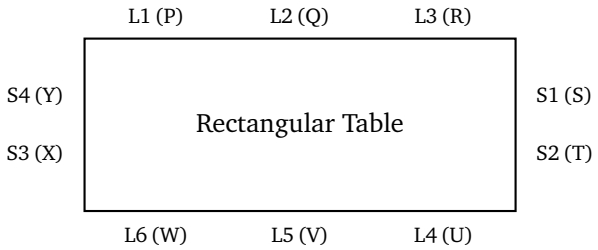
(B) 8 km, North

(C) 14 km, North

(D) 9 km, North

Q11. Directions (Q11–Q13): Ten friends — P, Q, R, S, T, U, V, W, X and Y — sit around a rectangular table. There are **three** seats along each of the two longer sides and **two** seats along each of the two shorter sides, so all ten face the centre of the table. The seats are shown below. The following is known:

- P sits at a corner of a longer side, at the seat marked **L1**.
- Q sits immediately to the right of P (seat **L2**).
- R sits at seat **L3**.
- Going clockwise from R, the next two seats (the right short side) are **S1, S2**, taken by S then T.
- The far long side, read clockwise, has seats **L4, L5, L6** taken by U, V, W.
- The remaining short side, read clockwise, has seats **S3, S4** taken by X then Y.



Q11. Who sits immediately to the left of R (i.e. at seat L2)?

(A) P

(B) Q

(C) S

(D) U

Q12. (Refer to the seating in Q11.) Which two friends occupy the right **short** side of the table?

(A) S and T

(B) X and Y

(C) U and V

(D) P and Q

Q13. (Refer to the seating in Q11.) Seat L5 on the far long side is occupied by whom?

(A) U

(B) W

(C) V

(D) Y

Q14. Five towers — Tower A, Tower B, Tower C, Tower D and Tower E — have different heights. Tower C is taller than Tower A but shorter than Tower D. Tower B is taller than Tower D. Tower E is the shortest of all. Which tower is the **third tallest**?

(A) Tower D

(B) Tower C

(C) Tower B

(D) Tower A

Q15. Four product launches — Alpha, Beta, Gamma and Delta — are scheduled in four different months: January, March, May and July (not necessarily in that order). Gamma launches in an odd-numbered month later than May. Alpha launches before Beta. Beta does not launch in January. Delta launches in March. In which month does **Alpha** launch?

(A) March

(B) July

(C) May

(D) January

Q16. **Statements:** All managers are leaders. Some leaders are mentors.

Conclusions: (I) Some leaders are managers. (II) All mentors are managers.

Which conclusion(s) follow?

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither follows

Q17. **Statements:** No pen is a pencil. All pencils are erasers.

Conclusions: (I) Some erasers are not pens. (II) No pen is an eraser.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q18. **Statement:** A city's main railway station has seen a sharp rise in pick-pocketing incidents during peak hours over the past two months.

Courses of Action: (I) The railway authority should increase the number of trained security personnel and CCTV coverage during peak hours. (II) The railway station should be permanently shut down to stop the thefts.

Which course(s) of action logically follow?

(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither follows

Q19. **Statement:** Should companies allow employees to permanently work from home?

Arguments: (I) Yes, it reduces office-space and commuting costs while widening the talent pool across cities. (II) No, no employee can ever be productive outside a physical office.

Which argument is **strong**?

(A) Only I is strong

(B) Only II is strong

(C) Both are strong

(D) Neither is strong

Q20. In a certain code: '$P \,\&\, Q$' means $P \geq Q$; '$P \,@\, Q$' means $P > Q$; '$P \,\#\, Q$' means $P = Q$; '$P \,\%\, Q$' means $P \leq Q$; '$P \sim Q$' means $P < Q$. Given $M \,@\, N$, $N \,\&\, O$ and $O \,\#\, R$, which of the following is **definitely true**?

(A) $R \,@\, M$

(B) $M \# O$

(C) $N \sim R$

(D) $M @ R$

Q21. In a class, Ravi ranks 12th from the top and 28th from the bottom in a list of students arranged by marks. How many students are there in the class in total?

(A) 40

(B) 38

(C) 39

(D) 41

Q22. At what time between 4 o'clock and 5 o'clock are the hour hand and the minute hand of a clock exactly **together** (one over the other)?

(A) $4{:}20$ exactly

(B) $4{:}21\frac{9}{11}$

(C) $4{:}22\frac{2}{11}$

(D) $4{:}18\frac{6}{11}$

Q23. In the grid below, each row follows the same rule: the third-column number equals (first column)^2 minus the second column. Find the value that replaces "?".

5	4	21
7	9	40
8	6	?

(A) 58

(B) 54

(C) 50

(D) 60

Q24. **Question:** What is the age of the father now?

Statement I: The father is 4 times as old as his son now.

Statement II: After 10 years, the father will be 2.5 times as old as his son.

Which statement(s) are sufficient to answer the question?

(A) Both statements together are sufficient, but neither alone is sufficient.

(B) Statement I alone is sufficient.

(C) Statement II alone is sufficient.

(D) Each statement alone is sufficient.

Q25. **Question:** Is the integer K negative?

Statement I: K^3 is negative.

Statement II: K^2 is positive.

Which statement(s) are sufficient to answer the question?

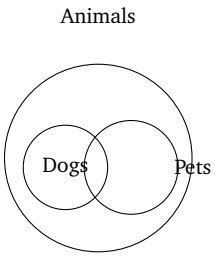
(A) Statement II alone is sufficient.

(B) Both statements together are sufficient, but neither alone is sufficient.

(C) Statement I alone is sufficient.

(D) Each statement alone is sufficient.

Q26. Which one of the descriptions below best represents the relationship among **Animals**, **Dogs** and **Pets**? (Every dog is an animal; some dogs and some other animals are kept as pets; some pets such as goldfish are animals too, but no pet here is a non-animal.)



The correct relation is:

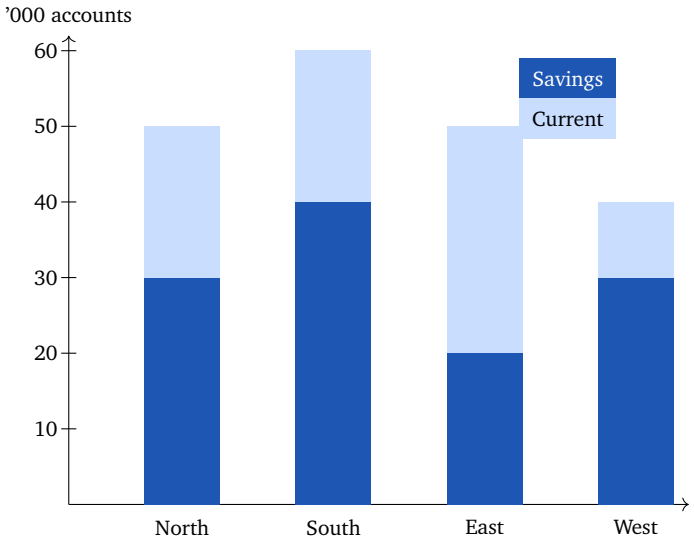
(A) Three mutually separate circles.

(B) "Pets" wholly contains both "Dogs" and "Animals".

(C) "Animals" and "Pets" coincide exactly, with "Dogs" outside.

(D) "Dogs" wholly inside "Animals"; "Pets" lies inside "Animals" too and overlaps "Dogs" partially.

Q27. Directions (Q27–Q30): The stacked bar chart below shows, for four regions, the number of new accounts (in thousands) opened by a bank, split into **Savings** accounts (lower, dark segment) and **Current** accounts (upper, light segment). Study it and answer the questions that follow.



Q27. What is the **total** number of new accounts (in thousands) opened in the **South** region?

(A) 50

(B) 60

(C) 40

(D) 70

Q28. (Refer to the chart in Q27.) In the **East** region, Current accounts form what percentage of the total new accounts opened in that region?

(A) 40%

(B) 50%

(C) 66%

(D) 60%

Q29. (Refer to the chart in Q27.) What is the ratio of the total **Savings** accounts (across all four regions) to the total **Current** accounts (across all four regions)?

(A) 4 : 3

(B) 3 : 2

(C) 3 : 4

(D) 2 : 3

Q30. (Refer to the chart in Q27.) By how many thousand do the total new accounts in the **South** region exceed those in the **West** region?

(A) 10

(B) 30

(C) 20

(D) 25

Part II: Analytical Reasoning Skills

Q31. Find the next term in the series: 3, 8, 15, 24, 35, ?

(A) 46

(B) 47

(C) 48

(D) 49

Q32. Find the next term in the series: 5, 6, 9, 14, 21, ?

(A) 28

(B) 30

(C) 29

(D) 32

Q33. **Doctor : Patient :: Lawyer : ?**

(A) Client

(B) Judge

(C) Court

(D) Law

Q34. 7 : 50 :: 9 :? (apply the same rule that takes 7 to 50).

(A) 80

(B) 81

(C) 83

(D) 82

Q35. Three of the following four numbers share a common property. Which one does **not** belong to the group?

(A) 64

(B) 124

(C) 216

(D) 343

Q36. In a certain code, the word **TIGER** is written as **20-9-7-5-18** (each letter replaced by its position in the alphabet). Using the same rule, how is the word **LION** written?

(A) 12-8-15-14

(B) 12-9-14-15

(C) 12-9-15-14

(D) 11-9-15-14

Q37. In a certain language, **ROAD** is coded as **WTFI**. Following the same rule (shift each letter five places ahead in the alphabet, wrapping after Z), how is **LANE** coded?

(A) QFSI

(B) QFRJ

(C) QESI

(D) QFSJ

Q38. Pointing to a woman, Rahul said, "She is the daughter of the only daughter of my grandmother." How is the woman related to Rahul?

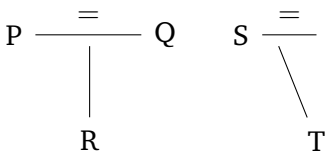
(A) Sister or cousin

(B) Aunt

(C) Mother

(D) Niece

Q39. Study the family tree below, where a double line "=" joins a married couple and a downward line joins a parent to a child. How is **P** related to **T**?



(P and Q are a married couple; R is their son; S is Q's brother; T is S's son)

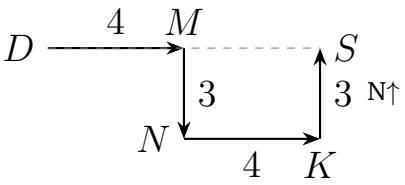
(A) Father

(B) Uncle (by marriage)

(C) Brother

(D) Grandfather

Q40. A delivery van starts at depot D, drives 4 km East to M, then 3 km South to N, then 4 km East to K, and finally 3 km North to stop S. The route is shown below. What is the straight-line distance between D and S, and in which direction does S lie from D?



(A) 10 km, East

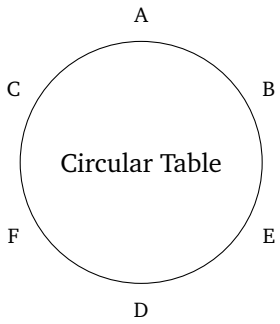
(B) 6 km, East

(C) 14 km, East

(D) 8 km, East

Q41. **Directions (Q41–Q43):** Six people — A, B, C, D, E and F — sit around a **circular** table facing the centre. The arrangement (clockwise) is shown below. The following is known:

- A sits directly opposite D.
- B sits immediately to the right of A (clockwise from A).
- C sits immediately to the left of A.
- E sits immediately to the right of D, and F sits immediately to the left of D.



Q41. Who sits immediately to the right of E (clockwise from E)?

(A) A

(B) C

(C) D

(D) B

Q42. (Refer to the seating in Q41.) Who sits second to the left of B?

(A) F

(B) E

(C) D

(D) C

Q43. (Refer to the seating in Q41.) Which pair sits immediately adjacent to C on both sides?

(A) A and B

(B) A and F

(C) D and E

(D) B and E

Q44. Five cousins — V, W, X, Y and Z — have different ages. W is older than X but younger than Y. Z is younger than X. V is the oldest of all. Who is the **youngest**?

(A) X

(B) W

(C) Y

(D) Z

Q45. Four people — Kiran, Latha, Manoj and Neha — live on four different floors of a building numbered 1 (lowest) to 4 (highest). Manoj lives on the topmost floor. Kiran lives immediately above Latha. Neha lives on floor 1. On which floor does **Kiran** live?

(A) 2

(B) 4

(C) 3

(D) 1

Q46. **Statements:** All roses are flowers. All flowers are plants.

Conclusions: (I) All roses are plants. (II) Some plants are roses.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q47. **Statements:** Some books are pens. No pen is a chair.

Conclusions: (I) Some books are not chairs. (II) All books are chairs.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only II follows

(C) Neither follows

(D) Only I follows

Q48. **Statement:** A library announces, "Members who return books after the due date will be charged a daily late fee."

Assumptions: (I) Some members may return books late. (II) Charging a fee can encourage members to return books on time.

Which assumption(s) are **implicit**?

(A) Only I is implicit

(B) Both I and II are implicit

(C) Only II is implicit

(D) Neither is implicit

Q49. **Statement:** "Regular physical exercise improves concentration and reduces stress," says a health advisory.

Conclusions: (I) Physical exercise can have mental benefits. (II) Only exercise can reduce stress; nothing else can.

Which conclusion logically follows?

(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither follows

Q50. In a certain code: '$P \star Q$' means $P > Q$; '$P \circ Q$' means $P < Q$; '$P \diamond Q$' means $P = Q$; '$P \triangle Q$' means $P \geq Q$; '$P \nabla Q$' means $P \leq Q$. Given $A \star B$, $B \diamond C$ and $C \triangle D$, which of the following is **definitely true**?

(A) $A \star D$

(B) $D \star A$

(C) $A \diamond C$

(D) $B \circ D$

Q51. In a row of children facing North, Sita is 7th from the left end and 11th from the right end. How many children are there in the row?

(A) 18

(B) 17

(C) 16

(D) 19

Q52. If 15 August 2026 falls on a **Saturday**, on which day of the week will 15 August 2027 fall? (Note: the period from 15 Aug 2026 to 15 Aug 2027 contains no 29 February.)

(A) Saturday

(B) Monday

(C) Sunday

(D) Friday

Q53. In the grid below, each row follows the same rule: the third-column number equals the product of the first two columns, plus 2. Find the value that replaces "?".

3	4	14
5	3	17
6	5	?

(A) 32

(B) 30

(C) 34

(D) 28

Q54. **Question:** What is the two-digit number?

Statement I: The sum of its digits is 9.

Statement II: The number is divisible by 9 and lies between 20 and 30.

Which statement(s) are sufficient to answer the question?

(A) Statement I alone is sufficient.

(B) Both statements together are sufficient, but neither alone is sufficient.

(C) Each statement alone is sufficient.

(D) Statement II alone is sufficient.

Q55. **Question:** Is x greater than y?

Statement I: $x - y = 5$.

Statement II: $x + y = 20$.

Which statement(s) are sufficient to answer the question?

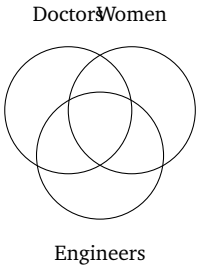
(A) Statement I alone is sufficient.

(B) Statement II alone is sufficient.

(C) Both statements together are needed.

(D) Each statement alone is sufficient.

Q56. Which one of the descriptions below best represents the relationship among **Doctors**, **Women** and **Engineers**? (Some doctors are women; some women are engineers; some doctors are engineers; but the three groups are not identical.)



The correct relation is:

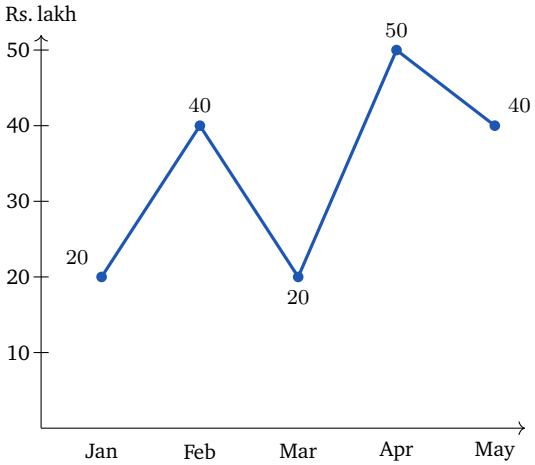
(A) Three mutually separate circles with no overlap.

(B) Three circles each overlapping the other two partially.

(C) One circle wholly inside another, the third separate.

(D) All three circles coinciding exactly.

Q57. Directions (Q57–Q60): The line graph below shows the monthly sales (in Rs. lakh) of a company over five months, January to May. Study it and answer the questions that follow.



Q57. What were the total sales (in Rs. lakh) over the five months January to May?

(A) 170

(B) 190

(C) 160

(D) 200

Q58. (Refer to the graph in Q57.) By what percentage did the sales increase from **January** to **February**?

(A) 100%

(B) 50%

(C) 80%

(D) 40%

Q59. (Refer to the graph in Q57.) Between which two consecutive months was the **drop** in sales the greatest?

(A) January to February

(B) March to April

(C) April to May

(D) February to March

Q60. (Refer to the graph in Q57.) What was the **average** monthly sales (in Rs. lakh) over the five months?

(A) 34

(B) 36

(C) 40

(D) 38

Detailed Solutions

Q1.

Solution

Concept — Number series (multiply-and-add): Look for a rule that links each term to the next.

Step 1 — Test "double and add 1":

$$2 \times 2 + 1 = 5, \quad 5 \times 2 + 1 = 11, \quad 11 \times 2 + 1 = 23, \quad 23 \times 2 + 1 = 47.$$

Each term is the previous term doubled, then $+1$.

Step 2 — Apply to the last term:

$$47 \times 2 + 1 = 94 + 1 = 95.$$

Why other options are wrong:

- $91, 93, 96$ do not satisfy "$\times 2 + 1$", which forces exactly 95.

Final Answer: The next term is $95 \Rightarrow$ C

Answer: (C) Go Back to Q1

Q2.

Solution

Concept — Letter series: Convert letters to position numbers and study the gaps.

Step 1 — Positions:

$$\text{B} = 2,\ \text{D} = 4,\ \text{G} = 7,\ \text{K} = 11,\ \text{P} = 16.$$

Step 2 — Differences:

$$4 - 2 = 2, \quad 7 - 4 = 3, \quad 11 - 7 = 4, \quad 16 - 11 = 5.$$

The gaps are $2, 3, 4, 5$, so the next gap is 6.

Step 3 — Next position:

$$16 + 6 = 22 \ \Rightarrow \ \text{the 22nd letter} = \text{V}.$$

Why other options are wrong:

- T (20) and U (21) use too small a gap; W (23) overshoots by one.

Final Answer: The next letter is V $\Rightarrow$ D

Answer: (D) Go Back to Q2

Q3.

Solution

Concept — Worker : Product made: A craftsman is matched with the object he chiefly makes or builds.

Step 1 — Decode the given pair: A *cobbler* makes (and repairs) *shoes*.

Step 2 — Apply to the second pair: A *mason* builds *walls* (and other brick/stone structures). So Mason : Wall.

Why other options are wrong:

- Cloth is worked by a tailor or weaver.
- Wood is worked by a carpenter.
- Iron is worked by a blacksmith.

Final Answer: Mason builds a Wall $\Rightarrow$ B

Answer: (B) Go Back to Q3

Q4.

Solution

Concept — Number analogy: Find a function mapping 6 to 43, then apply the same function to 8.

Step 1 — Spot the rule: Note $6^2 = 36$ and $36+6+1 = 43$. So the rule is n^2+n+1.

Step 2 — Verify on the given pair:

$$6^2 + 6 + 1 = 36 + 6 + 1 = 43. \checkmark$$

Step 3 — Apply to 8:

$$8^2 + 8 + 1 = 64 + 8 + 1 = 73.$$

Why other options are wrong:

- 72 is $8^2 + 8$ (forgets the "+1").
- 65 is $8^2 + 1$ (forgets the "+n").
- 71 does not fit $n^2 + n + 1$.

Final Answer: $8 \to 73 \Rightarrow$ A

Answer: (A) Go Back to Q4

Q5.

Solution

Concept — Classification (prime numbers): Look for a property shared by three of the four numbers.

Step 1 — Test primality:

$$13 = \text{prime}, \quad 17 = \text{prime}, \quad 23 = \text{prime}.$$

Each has no factors other than 1 and itself.

Step 2 — Check 21**:** $21 = 3 \times 7$, so 21 is composite, not prime.

Step 3 — Identify the odd one: $13, 17, 23$ are primes; 21 breaks the pattern.

Why other options are wrong:

- $13, 17, 23$ are each prime, so they belong to the group.

Final Answer: 21 is not prime $\Rightarrow$ C

Answer: (C) Go Back to Q5

Q6.

Solution

Concept — Conditional substitution code: Shift each consonant $+2$ in the alphabet (wrapping Y→A, Z→B); replace every vowel by the digit 0.

Step 1 — Process each letter of MODEL:

- M (consonant) $\to$ M+2 = O
- O (vowel) $\to$ 0
- D (consonant) $\to$ D+2 = F

- E (vowel) $\rightarrow 0$
- L (consonant) $\rightarrow$ L$+2$ = N

Step 2 — Assemble: MODEL $\rightarrow$ O 0 F 0 N = O0F0N.

Why other options are wrong:

- O0FGN, O0FFN miscode the consonant D or E.
- 0OF0N wrongly turns the first consonant M into a 0.

Final Answer: MODEL = O0F0N $\Rightarrow$ B

Answer: (B) Go Back to Q6

Q7.

Solution

Concept — Same conditional code: Consonants shift $+2$; vowels become 0.

Step 1 — Process each letter of QUEST:

- Q (consonant) $\rightarrow$ Q$+2$ = S
- U (vowel) $\rightarrow 0$
- E (vowel) $\rightarrow 0$
- S (consonant) $\rightarrow$ S$+2$ = U
- T (consonant) $\rightarrow$ T$+2$ = V

Step 2 — Assemble: QUEST $\rightarrow$ S 0 0 U V = S00UV.

Why other options are wrong:

- S0G0V treats E as a consonant (coding it as a letter, not 0).
- S0EUV leaves the second vowel E as a letter instead of 0.
- S0FTV miscodes the vowels and the consonants S, T.

Final Answer: QUEST = S00UV, shown in option (D) $\Rightarrow$ D

Answer: (D) Go Back to Q7

Q8.

Solution

Concept — Family tree reading: Trace generations from the tree.

Step 1 — Top generation: A and B are a married couple. C is their daughter (one generation below A).

Step 2 — Next generation: C is married to D, and G, H are the children of C and D (one further generation down).

Step 3 — Relate H to A: The chain is A $\rightarrow$ C $\rightarrow$ H. So H is the child of A's child, i.e. H is A's grandchild. (H's gender is not stated, so "grandchild" is the precise relation, not grandson/granddaughter.)

Why other options are wrong:

- Son/Daughter would put H only one generation below A, which is wrong.
- Niece would require H to be the child of A's sibling, not of A's daughter.

Final Answer: H is the grandchild of A $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q8

Q9.

Solution

Concept — Coded relation: Break the statement into pieces, innermost first.

Step 1 — "the only brother of my father": Meera's father's only brother is Meera's uncle (paternal uncle).

Step 2 — "the son of (my uncle)": The son of Meera's uncle is Meera's cousin.

Step 3 — Conclusion: The man in the photograph is Meera's cousin.

Why other options are wrong:

- Brother: would require the same parents, not an uncle's son.
- Uncle: that is the father's brother himself, not his son.
- Nephew: that reverses the generation.

Final Answer: The man is Meera's cousin $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q9

Q10.

Solution

Concept — Direction sense (net displacement): Add the North/South moves and the East/West moves separately.

Step 1 — Net East–West: 8 km East then 8 km West cancel out, giving 0 km East–West.

Step 2 — Net North–South: 6 km North $+ 3$ km North $= 9$ km North.

Step 3 — Straight-line distance: Since there is no East–West offset, Q is directly North of P at a distance of 9 km.

Step 4 — Direction: Q lies due North of P.

Why other options are wrong:

- 11 km North-East assumes an East offset that the West leg cancels.
- 8 km and 14 km mis-add the two North legs (correct sum is $6 + 3 = 9$).

Final Answer: 9 km due North $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q10

Q11.

Solution

Concept — Rectangular table seating: Place each clue directly onto the labelled seats.

Step 1 — Long side with P, Q, R: P at L1, Q at L2 (immediately right of P), R at L3.

Step 2 — Right short side: S1 = S, S2 = T.

Step 3 — Far long side: L4 = U, L5 = V, L6 = W.

Step 4 — Left short side: S3 = X, S4 = Y.

Step 5 — Answer for Q11: The seat immediately to the left of R (at L3) is L2, which is Q.

Why other options are wrong:

- P sits at L1 (two seats left of R), S sits on the short side, U sits on the far long side.

Final Answer: Immediately left of R is Q $\Rightarrow$ B

Answer: (B) Go Back to Q11

Q12.

Solution

Concept — Read off the fixed seating from Q11.

Step 1 — Identify the right short side: The right short side holds seats S1 and S2, occupied by S and T respectively.

Step 2 — Match to options: S and T occupy the right short side.

Why other options are wrong:

- X and Y are on the *left* short side.
- U and V are on the far long side; P and Q are on the near long side.

Final Answer: Right short side = S and T $\Rightarrow$ A

Answer: (A) Go Back to Q12

Q13.

Solution

Concept — Read off the fixed seating from Q11.

Step 1 — Far long side seats: L4 = U, L5 = V, L6 = W.

Step 2 — Locate L5: Seat L5 is occupied by V.

Why other options are wrong:

- U is at L4, W is at L6, and Y is on the short side.

Final Answer: L5 = V $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept — Attribute ordering (heights): Translate each comparison into one chain.

Step 1 — Write inequalities (">" means taller):

$$\text{D} > \text{C} > \text{A}, \quad \text{B} > \text{D}, \quad \text{E} = \text{shortest}.$$

Step 2 — Merge: Combining $B > D > C > A$ and E at the bottom:

$$\text{B} > \text{D} > \text{C} > \text{A} > \text{E}.$$

Step 3 — Third tallest: Tallest is B, second is D, third is C.

Why other options are wrong:

- B is first (tallest), D is second, A is fourth.

Final Answer: Third tallest is Tower C $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q14

Q15.

Solution

Concept — Scheduling across months: The months in order are January, March, May, July.

Step 1 — Fix Delta: Delta launches in March.

Step 2 — Place Gamma: "Odd-numbered month later than May": the months as ordinal positions are Jan(1), March(3), May(5), July(7). An odd-numbered month later than May is July (7). So Gamma = July.

Step 3 — Remaining people and months: Left to place: Alpha, Beta into January, May (March and July are taken).

Step 4 — Use the remaining clues: Beta does not launch in January, so Beta = May, leaving Alpha = January. Check "Alpha before Beta": January is before May ✓.

Step 5 — Final schedule: Alpha = Jan, Delta = March, Beta = May, Gamma = July.

Why other options are wrong:

- March is Delta, May is Beta, July is Gamma — none is Alpha.

Final Answer: Alpha launches in January $\Rightarrow$ D

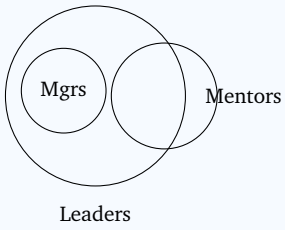
Answer: (D) Go Back to Q15

Q16.

Solution

Concept — Syllogism (All + Some): Draw the diagram and test each conclusion.

Step 1 — Diagram: "All managers are leaders" nests Managers inside Leaders. "Some leaders are mentors" overlaps Leaders with Mentors.



Step 2 — Test Conclusion I: "Some leaders are managers." Since all managers are leaders and managers exist, those managers are leaders, so some leaders are indeed managers. **I follows.**

Step 3 — Test Conclusion II: "All mentors are managers." The overlap of mentors is only with leaders in general, not specifically managers; mentors could be leaders who are not managers. **II does not follow.**

Why other options are wrong:

- Options accepting II assert an unsupported universal.
- "Neither" wrongly rejects the valid I.

Final Answer: Only I follows $\Rightarrow$ A

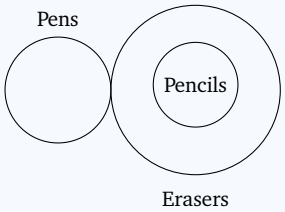
Answer: (A) Go Back to Q16

Q17.

Solution

Concept — Syllogism (No + All): Draw the exclusion and the nesting.

Step 1 — Diagram: "No pen is a pencil" separates Pens from Pencils. "All pencils are erasers" nests Pencils inside Erasers.



Step 2 — Test Conclusion I: "Some erasers are not pens." Pencils are erasers and are entirely separate from pens, so those pencil-erasers are erasers that are not pens. **I follows.**

Step 3 — Test Conclusion II: "No pen is an eraser." This is too strong: pens are only barred from pencils, not from the wider eraser set, so a pen could still be some other eraser. **II does not follow.**

Why other options are wrong:

- "Both" wrongly accepts II; "Only II" rejects the valid I.
- "Neither" rejects the valid I.

Final Answer: Only I follows $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q17

Q18.

Solution

Concept — Course of Action: A valid course should address the problem in a practical, proportionate way.

Step 1 — Evaluate Action I: More trained security and CCTV during peak hours directly targets pickpocketing at the time it occurs. It is practical and proportionate. **I follows.**

Step 2 — Evaluate Action II: Permanently shutting the station to stop thefts is grossly disproportionate; it would harm thousands of commuters to address a security gap. **II does not follow.**

Why other options are wrong:

- Options accepting II endorse an extreme, impractical step.
- "Neither" ignores the sensible action I.

Final Answer: Only I follows $\Rightarrow$ C

Answer: (C) Go Back to Q18

Q19.

Solution

Concept — Strong vs weak argument: A strong argument is directly relevant and based on sound reasoning, not on sweeping generalisation.

Step 1 — Evaluate Argument I: Reducing office-space and commuting costs and widening the talent pool across cities are concrete, relevant benefits of permanent work-from-home. **I is strong.**

Step 2 — Evaluate Argument II: "No employee can ever be productive outside an office" is an absolute claim contradicted by common experience. **II is weak.**

Why other options are wrong:

- Options accepting II rely on an unsupported absolute.
- "Neither" ignores the valid, relevant reasoning in I.

Final Answer: Only I is strong $\Rightarrow$ A

Answer: (A) Go Back to Q19

Q20.

Solution

Concept — Coded inequalities: Translate the symbols, then chain.

Step 1 — Decode:

$$M \,@\, N \Rightarrow M > N, \quad N \,\&\, O \Rightarrow N \geq O, \quad O \,\#\, R \Rightarrow O = R.$$

Step 2 — Combine: $M > N \geq O = R$. Hence $M > O$ and $O = R$, giving $M > R$.

Step 3 — Match to code: $M > R$ is written $M \,@\, R$.

Why other options are wrong:

- $R \,@\, M$ ($R > M$) reverses the proven inequality.
- $M \,\#\, O$ ($M = O$) is false since $M > O$.
- $N \sim R$ ($N < R$) is false since $N \geq O = R$ gives $N \geq R$.

Final Answer: $M > R$, i.e. $M \,@\, R \Rightarrow$ D

Answer: (D) Go Back to Q20

Q21.

Solution

Concept — Ranking (total from two ends): Total = (rank from top) + (rank from bottom) -1, because Ravi is counted once from each end.

Step 1 — Apply the formula:

$$12 + 28 - 1 = 39.$$

Step 2 — Interpret: There are 39 students in the class.

Why other options are wrong:

- 40 adds the two ranks without subtracting the double-count.
- 38 subtracts 2 instead of 1; 41 adds instead of subtracts.

Final Answer: Total students $= 39 \Rightarrow$ C

Answer: (C) Go Back to Q21

Q22.

Solution

Concept — Clock (hands coinciding): The minute hand gains on the hour hand at $5\frac{1}{2}$ minute-spaces per minute. At 4:00 the hour hand is at the 20-minute mark, so the minute hand must gain 20 minute-spaces to overlap it.

Step 1 — Gain needed: At 4 o'clock the hour hand leads the minute hand by 20 minute-spaces.

Step 2 — Time to close the gap: Relative speed $= 5\frac{1}{2} = \frac{11}{2}$ minute-spaces per minute. Time

$$= \frac{20}{11/2} = 20 \times \frac{2}{11} = \frac{40}{11} = 3\tfrac{7}{11} \text{ min.}$$

Step 3 — Clock time: The minute hand needs $\frac{40}{11}$ minutes past 4 o'clock to catch the hour hand. Now

$\frac{40}{11} = 3\frac{7}{11}$ min past the 20-mark, i.e. the minute hand is at $\frac{240}{11}$ minute-spaces.

Since $\frac{240}{11} = 21\frac{9}{11}$, the coincidence occurs at $4{:}21\frac{9}{11}$.

Step 4 — Check: Minute hand at $\frac{240}{11}$ minute-spaces; hour hand at $20 + \frac{1}{12} \cdot \frac{240}{11} = 20 + \frac{20}{11} = \frac{240}{11}$ minute-spaces. They match ✓.

Why other options are wrong:

- $4{:}20$ exactly ignores the hour hand's own movement.
- $4{:}22\frac{2}{11}$ and $4{:}18\frac{6}{11}$ use the wrong gain.

Final Answer: They coincide at $4{:}21\frac{9}{11} \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q22

Q23.

Solution

Concept — Grid rule: Apply the stated rule (col3 = col1^2 − col2) and verify on the known rows.

Step 1 — Verify Row 1: $5^2 - 4 = 25 - 4 = 21$ ✓ (matches the given 21).

Step 2 — Verify Row 2: $7^2 - 9 = 49 - 9 = 40$ ✓ (matches the given 40).

Step 3 — Apply to Row 3:

$$8^2 - 6 = 64 - 6 = 58.$$

Why other options are wrong:

- 54 would need $8^2 - 10$; 50 would need $8^2 - 14$; 60 would need $8^2 - 4$ — none uses the verified rule.

Final Answer: $? = 58 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — Data sufficiency: Test each statement alone, then together. We need a single numerical value for the father's age.

Step 1 — Statement I alone: $F = 4S$. One equation, two unknowns; the father could be 40 & son 10, or 80 & son 20, etc. **Not sufficient.**

Step 2 — Statement II alone: $F + 10 = 2.5(S + 10)$. Again one equation, two unknowns; many (F, S) pairs fit. **Not sufficient.**

Step 3 — Both together: Substitute $F = 4S$ into $F + 10 = 2.5(S + 10)$:

$$4S + 10 = 2.5S + 25 \Rightarrow 1.5S = 15 \Rightarrow S = 10, \quad F = 40.$$

A unique value follows. **Both together are sufficient; neither alone is.**

Why other options are wrong:

- Each statement alone leaves a ratio with infinitely many solutions.

Final Answer: Both statements together are sufficient $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q24

Q25.

Solution

Concept — Data sufficiency: Test each statement alone. We need a definite Yes/No to "Is K negative?"

Step 1 — Statement I alone: $K^3 < 0$. A cube is negative only when its base is negative, so $K < 0$. This gives a definite **Yes**. **Sufficient.**

Step 2 — Statement II alone: $K^2 > 0$ only tells us $K \neq 0$; K could be positive or negative. No definite answer. **Not sufficient.**

Step 3 — Conclusion: Statement I alone settles the question; Statement II alone does not.

Why other options are wrong:

- Statement II alone leaves both signs possible.
- "Both needed" is false since I already suffices; "each alone" is false since II fails.

Final Answer: Statement I alone is sufficient $\Rightarrow$ C

Answer: (C) Go Back to Q25

Q26.

Solution

Concept — Logical Venn diagram: Translate each relationship into circle positions.

Step 1 — "Every dog is an animal": The Dogs circle lies wholly inside the Animals circle.

Step 2 — "Some dogs are pets, some other animals are pets, and every pet here is an animal": The Pets circle lies inside Animals (no pet is a non-animal) and overlaps Dogs partially (some dogs are pets, some pets are non-dog animals).

Step 3 — Assemble: Dogs $\subset$ Animals; Pets $\subset$ Animals; Pets overlaps Dogs partially. This matches option (D).

Why other options are wrong:

- (A) separate circles ignores that dogs are animals.
- (B) Pets containing Animals reverses the containment.
- (C) Animals $=$ Pets is false, since not every animal is a pet.

Final Answer: Dogs inside Animals; Pets inside Animals overlapping Dogs $\Rightarrow$ D

Answer: (D) Go Back to Q26

Q27.

Solution

Concept — Reading a stacked bar: Each bar's total height is the sum of its two segments (Savings + Current).

Step 1 — Read the South bar: Savings $= 40$ thousand, Current $= 20$ thousand.

Step 2 — Add the segments:

$$40 + 20 = 60 \text{ thousand.}$$

Why other options are wrong:

- 50, 40, 70 misread one of the two South segments.

Final Answer: South total $= 60$ thousand $\Rightarrow$ B

Answer: (B) Go Back to Q27

Q28.

Solution

Concept — Component percentage: Percentage $= \dfrac{\text{component}}{\text{region total}} \times 100$.

Step 1 — Read the East bar: Savings $= 20$ thousand, Current $= 30$ thousand. Total $= 20 + 30 = 50$ thousand.

Step 2 — Compute the Current share:

$$\frac{30}{50} \times 100 = 60\%.$$

Why other options are wrong:

- 40% is the Savings share, not Current.
- 50% and 66% use the wrong total or component.

Final Answer: Current is 60% of the East total $\Rightarrow$ D

Answer: (D) Go Back to Q28

Q29.

Solution

Concept — Totals across all bars: Add each component over the four regions, then form the ratio.

Step 1 — Total Savings: North 30 + South 40 + East 20 + West $30 = 120$ thousand.

Step 2 — Total Current: North 20 + South 20 + East 30 + West $10 = 80$ thousand.

Step 3 — Form the ratio:

$$120 : 80 = 3 : 2.$$

Dividing both by 40 gives $3 : 2$.

Why other options are wrong:

- $4 : 3$, $3 : 4$, $2 : 3$ do not reduce from $120 : 80$.

Final Answer: Savings : Current $= 3 : 2 \Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

Concept — Difference of two bar totals: Compute each region's total, then subtract.

Step 1 — South total: $40 + 20 = 60$ thousand.

Step 2 — West total: Savings 30 + Current $10 = 40$ thousand.

Step 3 — Difference:

$$60 - 40 = 20 \text{ thousand.}$$

Why other options are wrong:

- 10, 30, 25 result from misreading the South or West segments.

Final Answer: South exceeds West by 20 thousand $\Rightarrow$ C

Answer: (C) Go Back to Q30

Q31.

Solution

Concept — Number series ($n^2 - 1$): Compare each term with perfect squares.

Step 1 — Match to squares:

$$3 = 2^2 - 1, \quad 8 = 3^2 - 1, \quad 15 = 4^2 - 1, \quad 24 = 5^2 - 1, \quad 35 = 6^2 - 1.$$

Each term is one less than a perfect square of $2, 3, 4, 5, 6$.

Step 2 — Next term: The next square base is 7, so

$$7^2 - 1 = 49 - 1 = 48.$$

Why other options are wrong:

- $46, 47, 49$ do not equal $7^2 - 1$, the value forced by the pattern.

Final Answer: The next term is 48 $\Rightarrow$ C

Answer: (C) Go Back to Q31

Q32.

Solution

Concept — Number series (odd differences): Study the gaps between consecutive terms.

Step 1 — Differences:

$$6-5=1, \quad 9-6=3, \quad 14-9=5, \quad 21-14=7.$$

The gaps are $1, 3, 5, 7$ (consecutive odd numbers).

Step 2 — Next gap and term: The next odd number is 9, so

$$21+9=30.$$

Why other options are wrong:

- $28, 29, 32$ do not use the next odd gap of 9.

Final Answer: The next term is $30 \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q32

Q33.

Solution

Concept — Professional : Person served: A professional is matched with the person who receives the service.

Step 1 — Decode the given pair: A *doctor* treats a *patient*.

Step 2 — Apply to the second pair: A *lawyer* represents a *client*. So Lawyer : Client.

Why other options are wrong:

- Judge and Court are places/officials a lawyer appears before, not the person served.
- Law is the subject, not the person served.

Final Answer: Lawyer serves a Client $\Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q33

Q34.

Solution

Concept — Number analogy: Find a function mapping 7 to 50, then apply it to 9.

Step 1 — Spot the rule: Note $7^2 = 49$ and $49 + 1 = 50$. So the rule is $n^2 + 1$.

Step 2 — Verify on the given pair:

$$7^2 + 1 = 49 + 1 = 50. \checkmark$$

Step 3 — Apply to 9:

$$9^2 + 1 = 81 + 1 = 82.$$

Why other options are wrong:

- 81 is 9^2 (forgets the "$+1$").
- 80 and 83 do not fit $n^2 + 1$.

Final Answer: $9 \to 82 \Rightarrow$ D

Answer: (D) Go Back to Q34

Q35.

Solution

Concept — Classification (perfect cubes): Look for a property shared by three of the four numbers.

Step 1 — Test for perfect cubes:

$$64 = 4^3, \quad 216 = 6^3, \quad 343 = 7^3.$$

Each is a perfect cube.

Step 2 — Check 124: $4^3 = 64$ and $5^3 = 125$, so 124 lies between two cubes and is *not* a perfect cube.

Step 3 — Identify the odd one: $64, 216, 343$ are cubes; 124 breaks the pattern.

Why other options are wrong:

- $64, 216, 343$ are each a perfect cube, so they belong to the group.

Final Answer: 124 is not a perfect cube $\Rightarrow$ B

Answer: (B) Go Back to Q35

Q36.

Solution

Concept — Position code: Replace each letter by its serial position in the alphabet ($A = 1, \ldots, Z = 26$).

Step 1 — Positions of LION:

$$\text{L} = 12, \quad \text{I} = 9, \quad \text{O} = 15, \quad \text{N} = 14.$$

Step 2 — Assemble: LION $\rightarrow$ 12-9-15-14.

Why other options are wrong:

- 12-8-15-14 mis-numbers I as 8.
- 12-9-14-15 swaps O and N.
- 11-9-15-14 mis-numbers L as 11.

Final Answer: LION $=$ 12-9-15-14 $\Rightarrow$ C

Answer: (C) Go Back to Q36

Q37.

Solution

Concept — Shift code (+5): Each letter moves five places ahead, wrapping past Z.

Step 1 — Confirm the rule on ROAD:

$$\text{R} + 5 = \text{W}, \ \text{O} + 5 = \text{T}, \ \text{A} + 5 = \text{F}, \ \text{D} + 5 = \text{I} \ \Rightarrow \ \text{WTFI.} \ \checkmark$$

Step 2 — Apply to LANE:

$$\text{L} + 5 = \text{Q}, \quad \text{A} + 5 = \text{F}, \quad \text{N} + 5 = \text{S}, \quad \text{E} + 5 = \text{J}.$$

Step 3 — Assemble: LANE $\rightarrow$ QFSJ.

Why other options are wrong:

- QFSI codes E as I (+4) instead of J.

- QFRJ codes N as R $(+4)$ instead of S.
- QESI mis-shifts two letters.

Final Answer: LANE $=$ QFSJ $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q37

Q38.

Solution

Concept — Coded relation: Resolve the statement from the innermost phrase outward.

Step 1 — "the only daughter of my grandmother": Rahul's grandmother's only daughter is a woman one generation above Rahul — either Rahul's mother or his aunt (the statement does not pin down which line Rahul descends from).

Step 2 — "the daughter of (that woman)": The daughter of that woman is a girl of Rahul's own generation: if the woman is Rahul's mother, she is Rahul's *sister*; if she is Rahul's aunt, she is Rahul's *cousin*.

Step 3 — Conclusion: The woman is Rahul's sister or cousin.

Why other options are wrong:

- Aunt/Mother place her a generation above, but she is one generation below the "only daughter".
- Niece reverses the generation.

Final Answer: She is Rahul's sister or cousin $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q38

Q39.

Solution

Concept — Family tree reading: Trace each link from the diagram.

Step 1 — The married couple: P and Q are husband and wife; R is their son.

Step 2 — Q's side: S is Q's brother, and T is S's son. So T is Q's nephew.

Step 3 — Relate P to T: T is the son of Q's brother. P is married to Q, so P is the husband of T's aunt. Therefore P is T's uncle by marriage.

Why other options are wrong:

- Father/Grandfather would require a direct descent line, which does not exist between P and T.
- Brother would put P in T's own generation.

Final Answer: P is T's uncle (by marriage) $\Rightarrow$ B

Answer: (B) Go Back to Q39

Q40.

Solution

Concept — Direction sense (net displacement): Add the East/West moves and the North/South moves separately.

Step 1 — Net East–West: 4 km East $+ 4$ km East $= 8$ km East.

Step 2 — Net North–South: 3 km South then 3 km North cancel, giving 0 km North–South.

Step 3 — Straight-line distance: Since there is no North–South offset, S is directly East of D at a distance of 8 km.

Step 4 — Direction: S lies due East of D.

Why other options are wrong:

- 10 km and 14 km mis-add the legs; the South and North legs cancel and only the two East legs $(4 + 4)$ count.
- 6 km drops one of the East legs.

Final Answer: 8 km due East $\Rightarrow$ D

Answer: (D) Go Back to Q40

Q41.

Solution

Concept — Circular seating: Fix the clockwise order from the clues, then read off neighbours.

Step 1 — Anchor A and D opposite: Place A and D on opposite sides of the table.

Step 2 — Around A: B is immediately to A's right (clockwise after A) and C is immediately to A's left (clockwise before A).

Step 3 — Around D: E is immediately to D's right (clockwise after D) and F is immediately to D's left (clockwise before D).

Step 4 — Full clockwise order: Starting at A and moving clockwise:

$$A \to B \to E \to D \to F \to C \to A.$$

Step 5 — Right of E: Immediately clockwise after E is D. So the person immediately to the right of E is D.

Why other options are wrong:

- A is two seats before E; C is far on the other arc; B sits before E, not after.

Final Answer: Immediately to E's right is D $\Rightarrow$ $\boxed{C}$

Answer: (C) Go Back to Q41

Q42.

Solution

Concept — Read off the fixed circle from Q41. Clockwise order: A, B, E, D, F, C.

Step 1 — "Left" direction: For people facing the centre, a person's left is the counter-clockwise direction, i.e. the seat occupied *before* them in clockwise order.

Step 2 — First to the left of B: The seat clockwise-before B is A. So A is immediately to B's left.

Step 3 — Second to the left of B: Going one more step counter-clockwise from A lands on C. So C is second to the left of B.

Why other options are wrong:

- F and E sit on the arc to B's right, not left.
- D is opposite B, not second to its left.

Final Answer: Second to the left of B is C $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q42

Q43.

Solution

Concept — Read off the fixed circle from Q41. Clockwise order: A, B, E, D, F, C (and back to A).

Step 1 — Locate C's neighbours: In clockwise order the seat before C is F, and the seat after C (wrapping round) is A.

Step 2 — Both sides of C: So C is flanked by F on one side and A on the other.

Why other options are wrong:

- D and E sit near the opposite side of the table.
- B is adjacent to A, not to C; E is adjacent to B and D.

Final Answer: C is flanked by A and F $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q43

Q44.

Solution

Concept — Attribute ordering (ages): Convert each clue into one chain (">" means older).

Step 1 — Write inequalities:

$$\text{Y} > \text{W} > \text{X}, \quad \text{X} > \text{Z}, \quad \text{V} = \text{oldest}.$$

Step 2 — Merge: Combining gives

$$\text{V} > \text{Y} > \text{W} > \text{X} > \text{Z}.$$

Step 3 — Youngest: The bottom of the chain is Z.

Why other options are wrong:

- X is fourth, W is third, Y is second — none is at the bottom.

Final Answer: The youngest is Z $\Rightarrow$ D

Answer: (D) Go Back to Q44

Q45.

Solution

Concept — Floor assignment: Place each clue onto floors 1 to 4.

Step 1 — Fix the known floors: Neha is on floor 1. Manoj is on the topmost floor, floor 4.

Step 2 — Remaining floors: Floors 2 and 3 are left for Kiran and Latha.

Step 3 — Use "Kiran immediately above Latha": Kiran = Latha +1. With only floors 2 and 3 free, Latha = 2 and Kiran = 3.

Step 4 — Final assignment: Neha 1, Latha 2, Kiran 3, Manoj 4.

Why other options are wrong:

- Floor 4 is Manoj's; floor 1 is Neha's; floor 2 is Latha's.

Final Answer: Kiran lives on floor 3 $\Rightarrow$ C

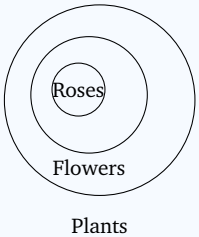
Answer: (C) Go Back to Q45

Q46.

Solution

Concept — Syllogism (All + All): Draw the nested circles and test each conclusion.

Step 1 — Diagram: "All roses are flowers" nests Roses inside Flowers; "All flowers are plants" nests Flowers inside Plants.



Step 2 — Test Conclusion I: "All roses are plants." Roses $\subset$ Flowers $\subset$ Plants, so

every rose is a plant. **I follows.**

Step 3 — Test Conclusion II: "Some plants are roses." Roses exist and all of them are plants, so some plants are indeed roses. **II follows.**

Why other options are wrong:

- Any option dropping I or II ignores a valid conclusion that the nesting forces.

Final Answer: Both I and II follow $\Rightarrow$ A

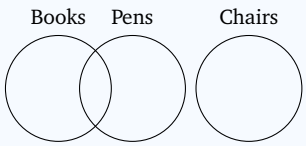
Answer: (A) Go Back to Q46

Q47.

Solution

Concept — Syllogism (Some + No): Draw the overlap and the exclusion.

Step 1 — Diagram: "Some books are pens" overlaps Books and Pens; "No pen is a chair" separates Pens entirely from Chairs.



Step 2 — Test Conclusion I: "Some books are not chairs." The books that are also pens cannot be chairs (no pen is a chair), so at least those books are not chairs. **I follows.**

Step 3 — Test Conclusion II: "All books are chairs." Nothing forces every book into Chairs; in fact some books (the pen-books) are barred from Chairs. **II does not follow.**

Why other options are wrong:

- Options accepting II assert an unsupported universal.
- "Neither" rejects the valid I.

Final Answer: Only I follows $\Rightarrow$ D

Answer: (D) Go Back to Q47

Q48.

Solution

Concept — Implicit assumption: An assumption is implicit if the statement makes no sense without taking it for granted.

Step 1 — Evaluate Assumption I: A late-fee rule is only meaningful if at least some members might return books late; otherwise the rule would have no purpose. **I is implicit.**

Step 2 — Evaluate Assumption II: The very reason for charging a fee is to nudge members toward returning on time; this expectation underlies the announcement. **II is implicit.**

Why other options are wrong:

- Dropping either assumption leaves the announcement without a rationale.

Final Answer: Both I and II are implicit $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q48

Q49.

Solution

Concept — Statement and conclusion: A conclusion follows only if it is fully supported by the statement, without overreach.

Step 1 — Evaluate Conclusion I: The advisory says exercise improves concentration and reduces stress — both mental effects. So "exercise can have mental benefits" is directly supported. **I follows.**

Step 2 — Evaluate Conclusion II: "Only exercise can reduce stress" is an exclusive claim the statement never makes; many other things can also reduce stress. **II does not follow.**

Why other options are wrong:

- Options accepting II rely on an unsupported "only".
- "Neither" ignores the clearly supported I.

Final Answer: Only I follows $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q49

Q50.

Solution

Concept — Coded inequalities: Translate the symbols, then chain.

Step 1 — Decode:

$$A \star B \Rightarrow A > B, \quad B \diamond C \Rightarrow B = C, \quad C \triangle D \Rightarrow C \geq D.$$

Step 2 — Combine: $A > B = C \geq D$. Hence $A > C$ and $C \geq D$, giving $A > D$.

Step 3 — Match to code: $A > D$ is written $A \star D$.

Why other options are wrong:

- $D \star A$ ($D > A$) reverses the proven inequality.
- $A \diamond C$ ($A = C$) is false since $A > C$.
- $B \circ D$ ($B < D$) is false since $B = C \geq D$ gives $B \geq D$.

Final Answer: $A > D$, i.e. $A \star D \Rightarrow$ A

Answer: (A) Go Back to Q50

Q51.

Solution

Concept — Ranking (total from two ends): Total = (position from left) + (position from right) -1, since Sita is counted from both ends.

Step 1 — Apply the formula:

$$7 + 11 - 1 = 17.$$

Step 2 — Interpret: There are 17 children in the row.

Why other options are wrong:

- 18 adds the two positions without removing the double-count.
- 16 subtracts 2; 19 adds instead of subtracts.

Final Answer: Total children $= 17 \Rightarrow$ B

Answer: (B) Go Back to Q51

Q52.

Solution

Concept — Calendar (odd days): Moving forward one year shifts the weekday by the number of "odd days" (days beyond complete weeks).

Step 1 — Count the days: From 15 Aug 2026 to 15 Aug 2027 is one full year. The intervening February (Feb 2027) is not a leap February, so the year has 365 days.

Step 2 — Odd days: $365 = 52 \times 7 + 1$, so there is 1 odd day.

Step 3 — Shift the weekday: 1 odd day moves the day one step forward: Saturday $\rightarrow$ Sunday.

Why other options are wrong:

- Saturday assumes 0 odd days (would need a 364-day gap).
- Monday assumes 2 odd days (a leap year); Friday moves the wrong way.

Final Answer: 15 Aug 2027 is a Sunday $\Rightarrow$ C

Answer: (C) Go Back to Q52

Q53.

Solution

Concept — Grid rule: Apply the stated rule ($\text{col}3 = \text{col}1 \times \text{col}2 + 2$) and verify on the known rows.

Step 1 — Verify Row 1: $3 \times 4 + 2 = 12 + 2 = 14$ ✓ (matches the given 14).

Step 2 — Verify Row 2: $5 \times 3 + 2 = 15 + 2 = 17$ ✓ (matches the given 17).

Step 3 — Apply to Row 3:

$$6 \times 5 + 2 = 30 + 2 = 32.$$

Why other options are wrong:

- 30 forgets the "+2"; 34 adds 4; 28 subtracts instead of adds.

Final Answer: $? = 32 \Rightarrow$ A

Answer: (A) Go Back to Q53

Q54.

Solution

Concept — Data sufficiency: Test each statement alone. We need one unique two-digit number.

Step 1 — Statement I alone: Digit sum $= 9$ is satisfied by $18, 27, 36, 45, 54, 63, 72, 81, 90$ — many numbers. **Not sufficient.**

Step 2 — Statement II alone: Divisible by 9 and between 20 and 30: the only multiple of 9 in that range is 27. A unique value. **Sufficient.**

Step 3 — Conclusion: Statement II alone fixes the number; Statement I alone does not.

Why other options are wrong:

- Statement I alone leaves nine possibilities.
- "Both needed" and "each alone" are false since II alone already suffices and I alone does not.

Final Answer: Statement II alone is sufficient $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q54

Q55.

Solution

Concept — Data sufficiency: We need a definite Yes/No to "Is $x > y$?"

Step 1 — Statement I alone: $x - y = 5 > 0$ means $x = y + 5 > y$. A definite **Yes**. **Sufficient.**

Step 2 — Statement II alone: $x + y = 20$ tells nothing about which is larger ($x = 15, y = 5$ gives Yes; $x = 5, y = 15$ gives No). **Not sufficient.**

Step 3 — Conclusion: Statement I alone answers the question; Statement II alone does not.

Why other options are wrong:

- Statement II alone leaves both orderings possible.
- "Both needed" and "each alone" are false since I alone suffices and II alone fails.

Final Answer: Statement I alone is sufficient $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q55

Q56.

Solution

Concept — Logical Venn diagram: Translate "some ... are ..." relations into partially overlapping circles.

Step 1 — Pairwise overlaps: "Some doctors are women" overlaps Doctors and Women; "some women are engineers" overlaps Women and Engineers; "some doctors are engineers" overlaps Doctors and Engineers.

Step 2 — Not identical: The three groups are distinct, so no circle sits wholly inside another and none coincide.

Step 3 — Assemble: Three circles, each partially overlapping the other two. This matches option (B).

Why other options are wrong:

- (A) separate circles contradicts the stated overlaps.
- (C) one circle inside another contradicts "some" (partial) overlaps.
- (D) coinciding circles contradicts "not identical".

Final Answer: Three mutually overlapping circles $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q56

Q57.

Solution

Concept — Reading a line graph: Read each month's value off the plotted points, then add.

Step 1 — Read the five values (Rs. lakh): Jan $= 20$, Feb $= 40$, Mar $= 20$, Apr $= 50$, May $= 40$.

Step 2 — Add them:

$$20 + 40 + 20 + 50 + 40 = 170.$$

Why other options are wrong:

- $190, 160, 200$ each misread one of the five monthly points.

Final Answer: Total sales $=$ Rs. 170 lakh $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q57

Q58.

Solution

Concept — Percentage increase: $\%$ increase $= \dfrac{\text{rise}}{\text{original}} \times 100$.

Step 1 — Read the two values: Jan $= 20$, Feb $= 40$.

Step 2 — Compute the rise: $40 - 20 = 20$.

Step 3 — Express as a percentage of January:

$$\frac{20}{20} \times 100 = 100\%.$$

Why other options are wrong:

- 50% divides by the new value instead of the old.
- 80% and 40% use the wrong rise or base.

Final Answer: Sales rose by $100\% \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q58

Q59.

Solution

Concept — Greatest drop: A drop occurs where the value falls; compare the sizes of all falls.

Step 1 — List month-to-month changes (Rs. lakh):

- Jan→Feb: $20 \to 40$ (rise $+20$)
- Feb→Mar: $40 \to 20$ (drop -20)
- Mar→Apr: $20 \to 50$ (rise $+30$)
- Apr→May: $50 \to 40$ (drop -10)

Step 2 — Compare the drops: Only two drops occur: 20 (Feb→Mar) and 10 (Apr→May). The larger drop is 20.

Step 3 — Identify the interval: The greatest drop is from February to March.

Why other options are wrong:

- Jan→Feb and Mar→Apr are rises, not drops.
- Apr→May is a drop of only 10, smaller than 20.

Final Answer: Greatest drop is February to March $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q59

Q60.

Solution

Concept — Average: Average $= \dfrac{\text{sum of values}}{\text{number of values}}$.

Step 1 — Sum of the five months: From Q57, the total is 170 (Rs. lakh).

Step 2 — Divide by the count:

$$\frac{170}{5} = 34.$$

Why other options are wrong:

- $36, 40, 38$ use a wrong total or divide incorrectly; $170 \div 5$ is exactly 34.

Final Answer: Average monthly sales $=$ Rs. 34 lakh $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q60

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	D	3	B	4	A	5	C
6	B	7	D	8	A	9	C	10	D
11	B	12	A	13	C	14	B	15	D
16	A	17	B	18	C	19	A	20	D
21	C	22	B	23	A	24	A	25	C
26	D	27	B	28	D	29	B	30	C
31	C	32	B	33	A	34	D	35	B
36	C	37	D	38	A	39	B	40	D
41	C	42	D	43	B	44	D	45	C
46	A	47	D	48	B	49	C	50	A
51	B	52	C	53	A	54	D	55	A
56	B	57	A	58	A	59	D	60	A