

CLAT Community

daily QT

SECTIONAL TEST

51

DAYS TO GO FOR **CLAT 2027**



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OUR RANKERS

1 in every 4 of CLAT Community's students
are now placed in Top 5 NLU's.



SAHER GOLE



PARTHIVA SUSHANTH



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SUHIT KENDURKAR



RIYA CHAUHAN



SHEIKH EHSAN KHALEELULLAH



HRISHIT PODDAR



ROHAN YADAV



TEJAS ROY



ANIRUDDH BAJAJ



KABIR WADHWANI



CANCHI SISTLA AKSHARA



SHIVAM TRIPATHI



HARDIK GAUTAM



MANYA BHASKAR



NAMASHRITA GOPINATH



RONIL DHASAL



VEDA RAO



SAMANDAR SINGH



GANJI HAINDAVI



SAHISHNA



PRANAV. S

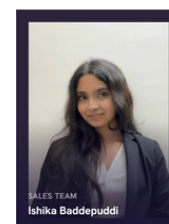
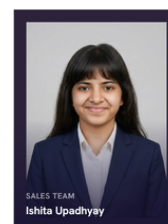
AND
MANY
MORE.

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OUR COURSES



OUR MENTORS



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MENTORS' NOTE

Good morning everyone,

If you're reading this, you're already doing something that thousands of CLAT aspirants never do—you've shown up today. That might sound like a small thing, but over the next few months you'll realise that success in CLAT is rarely decided by one brilliant mock or one 12-hour study session. It's decided by the hundreds of ordinary days where you choose to sit down and study even when you don't feel like it.

The entire CLAT Community team is rooting for you. Whenever you're stuck, ask doubts, discuss questions, and make use of the people around you. You don't have to prepare alone. We hope today's material helps you take one more step towards your dream.

Now stop reading this note and get to work. Your future self will thank you for the effort you put in today.

All the best.

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DAILY QT**PASSAGE 1 — HELIXPACK LOGISTICS: AM-GM OPTIMISATION & CONSTRAINED INEQUALITIES**

HelixPack Logistics designs storage cages and loading bays under fixed material budgets and site restrictions. Its planners model each design as a pair of positive quantities and optimise them using inequalities. Unless stated otherwise, all lengths are in metres and all quantities are positive.

1. A rectangular cage is fenced with 120 m of wire on all four sides. The maximum possible enclosed area is:

- (A) 800 m²
- (B) 900 m²
- (C) 1000 m²
- (D) 850 m²

2. For positive x and y with $x + y = 10$, the minimum value of $1/x + 4/y$ is:

- (A) 0.6
- (B) 1.2
- (C) 0.9
- (D) 0.75

3. For positive x and y with $x + y = 10$, the maximum value of $x^2 \cdot y^3$ is:

- (A) 3456
- (B) 3200
- (C) 3600
- (D) 2916

4. The number of integers x satisfying $|2x - 5| \leq 7$ is:

- (A) 7

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(B) 9

(C) 10

(D) 8

5. For $x > 0$, the minimum value of $x + 9/x$ is:

(A) 9

(B) 12

(C) 6

(D) 18

6. A 60 m wire is used to fence a rectangle, but the width is capped at 10 m by a site rule. The maximum enclosed area is:

(A) 200 m²

(B) 225 m²

(C) 180 m²

(D) 210 m²

PASSAGE 2 — CODENEST PUZZLES: STRUCTURE OF THREE-DIGIT NUMBERS

CodeNest Puzzles builds a daily challenge around three-digit numbers $N = abc$, where a is the hundreds digit, b the tens digit and c the units digit, with $a \geq 1$. Each puzzle imposes a condition on the digits, on divisibility, or on the reversal of the number. Questions 7 to 12 are independent of one another.

7. The number of three-digit numbers whose digits are strictly increasing from left to right ($a < b < c$) is:

(A) 120

(B) 84

(C) 36

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(D) 72

8. The sum of all six three-digit numbers formed by using the digits 1, 2 and 3 exactly once each is:

(A) 1232

(B) 1200

(C) 1332

(D) 1422

9. The number of three-digit numbers that are divisible by 11 and whose digits add up to 12 is:

(A) 6

(B) 8

(C) 4

(D) 12

10. The largest three-digit number N that is divisible by 4 and whose reversal is also divisible by 4 is:

(A) 996

(B) 960

(C) 912

(D) 888

11. The number of three-digit numbers in which every digit is odd and the digits add up to 9 is:

(A) 8

(B) 10

(C) 12

(D) 9

12. The largest three-digit number that is divisible by 9 and has three distinct digits is:

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(A) 972

(B) 990

(C) 981

(D) 963



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ANSWER KEY**PASSAGE 1 — HELIXPACK LOGISTICS (AM-GM & INEQUALITIES)**

Q1: (B) 900 m^2 — Perimeter 120 gives $l + w = 60$, and the product is maximised at $l = w = 30$, so the area is 900.

Q2: (C) 0.9 — The minimum occurs at $y = 2x$, giving $x = 10/3$ and $y = 20/3$. Then $1/x + 4/y = 3/10 + 3/5 = 0.9$.

Q3: (A) 3456 — Weighted AM-GM gives the maximum at $x = 4$ and $y = 6$, so the value is $4^2 \times 6^3 = 16 \times 216 = 3456$.

Q4: (D) 8 — $|2x - 5| \leq 7$ gives $-1 \leq x \leq 6$, which contains 8 integers.

Q5: (C) 6 — By AM-GM, $x + 9/x \geq 2\sqrt{9} = 6$, with equality at $x = 3$.

Q6: (A) 200 m^2 — Width w and length $30 - w$ give area $w(30 - w)$. The unconstrained optimum is $w = 15$, which breaks the 10 m cap. The area increases for $w < 15$, so the largest allowed width is $w = 10$, giving length 20 and area 200.

PASSAGE 2 — CODENEST PUZZLES (THREE-DIGIT NUMBER STRUCTURE)

Q7: (B) 84 — Choose any 3 digits from 0–9: $C(10,3) = 120$. Subsets containing 0 would put 0 first, which is invalid; there are $C(9,2) = 36$ such subsets. $120 - 36 = 84$.

Q8: (C) 1332 — Each digit appears twice in each place, so the sum is $2 \times (1 + 2 + 3) \times 111 = 1332$.

Q9: (A) 6 — Confirmed by enumeration over all three-digit multiples of 11 with digit sum 12.

Q10: (D) 888 — Confirmed by enumeration. 888 is divisible by 4 and its reversal is also 888.

Q11: (B) 10 — Confirmed by enumeration over three-digit numbers with all odd digits and digit sum 9.

Q12: (C) 981 — Confirmed by enumeration. 981 has distinct digits and digit sum 18, so it is divisible by 9.

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