

CLAT Community

daily
QT

SECTIONAL TEST

52

DAYS TO GO FOR
CLAT 2027



clatcommunity.com



[CLAT Community](#)



clatcommunity@gmail.com



[CLAT Community](#)



(+91) 7702 832 727



[CLAT Community](#)

OUR RANKERS

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



SAHER GOLE



PARTHIVA SUSHANTH



MIHIKA AGGARWAL



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

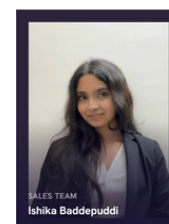
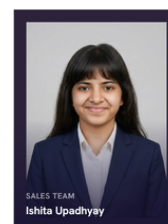
AND
MANY
MORE.

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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 — VAULTLOGIC LABS: NUMBER SYSTEMS, TRAILING ZEROS & REMAINDER CYCLES**

VaultLogic Labs stores client records under numeric keys built from base conversions, factorial products and modular cycles. The lab's security team audits four keys: Key A = 2046 written in base 7; Key B = $100!$; Key C = 2^{100} ; Key D = $7^{(7^7)}$. Its serial IDs are the integers from 1 to 500. Unless stated otherwise, work with exact integer values.

1. The number of trailing zeros in Key B ($100!$) is:

- (A) 22
- (B) 24
- (C) 26
- (D) 20

2. The unit digit of Key D ($7^{(7^7)}$) is:

- (A) 7
- (B) 1
- (C) 9
- (D) 3

3. The remainder when Key C (2^{100}) is divided by 7 is:

- (A) 2
- (B) 4
- (C) 1
- (D) 6

4. Key A, converted to base 10, equals:

- (A) 704
- (B) 712
- (C) 720
- (D) 728

5. The security team also checks $60!$. The highest power of 3 that divides $60!$ is:

- (A) 24
- (B) 28

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(C) 30

(D) 26

6. The number of serial IDs from 1 to 500 that are divisible by 6 or 15, but NOT divisible by 10, is:

(A) 100

(B) 86

(C) 84

(D) 90

PASSAGE 2 — ARCLINE DESIGN STUDIO: CHORDS, SAGITTAS, INSCRIBED FIGURES & INTERSECTING CHORDS

ArcLine Design is planning a circular fountain plaza with centre O. Its engineers use chord geometry, inscribed polygons and intersecting chords to fix paving lines, water jets and walkways. Questions 7 to 12 refer to the same plaza; the rim circle is the circle in Question 7, whose radius is then used in later questions. Use π where needed and select the nearest option.

7. A chord of the rim circle measures 24 m, and its sagitta (the gap between the midpoint of the chord and the arc) is 8 m. The radius of the rim circle is:

(A) 12 m

(B) 14 m

(C) 11 m

(D) 13 m

8. A square paving slab is inscribed in the rim circle (radius from Question 7). Its area is:

(A) 338 m²

(B) 288 m²

(C) 364 m²

(D) 312 m²

9. Two concentric circular paths have radii 13 m (outer) and 5 m (inner). A straight walkway is tangent to the inner path, with both ends on the outer path. Its length is:

(A) 18 m

(B) 24 m

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(C) 20 m

(D) 26 m

10. A regular hexagon is inscribed in a circle of radius 13 m. The ratio of the hexagon's area to the circle's area is:

(A) 0.75

(B) $2/\pi$

(C) $3\sqrt{3}/(2\pi)$

(D) $\sqrt{3}/2$

11. Inside the rim circle, chords AB and CD intersect at P. AP = 4 m, PB = 9 m, CP = 8 m. The length PD is:

(A) 4.5 m

(B) 4 m

(C) 5 m

(D) 3.5 m

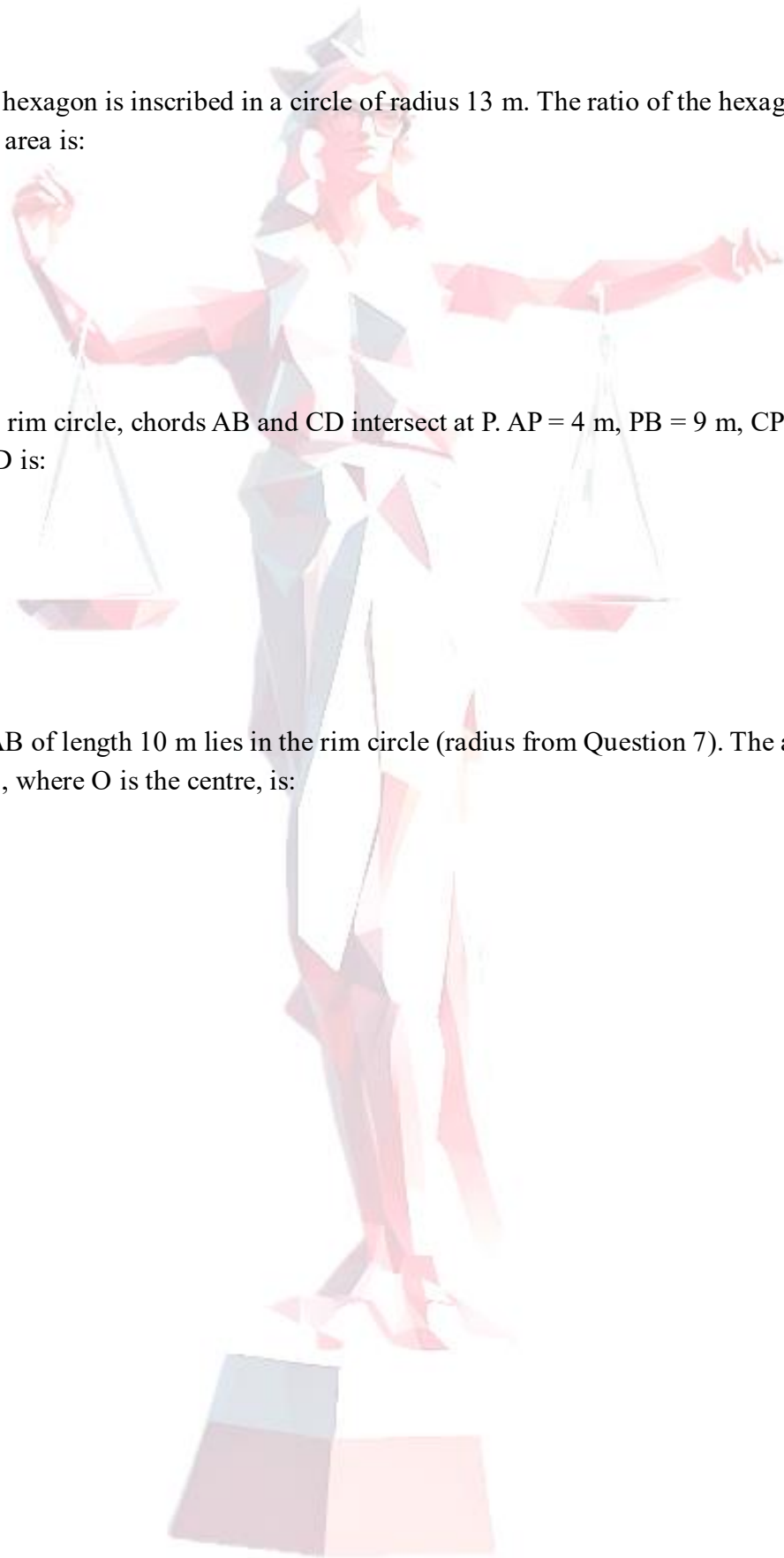
12. A chord AB of length 10 m lies in the rim circle (radius from Question 7). The area of triangle OAB, where O is the centre, is:

(A) 48 m²

(B) 60 m²

(C) 50 m²

(D) 65 m²



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ANSWER KEY**PASSAGE 1 — VAULTLOGIC LABS (NUMBER SYSTEMS & REMAINDERS)**

Q1: (B) 24 — $[100/5] + [100/25] = 20 + 4 = 24$.

Q2: (D) 3 — 7 has unit-digit cycle 7, 9, 3, 1 (period 4). $7^7 \equiv 3 \pmod{4}$, and 7^3 ends in 3.

Q3: (A) 2 — $2^3 \equiv 1 \pmod{7}$, and $100 = 3 \times 33 + 1$, so $2^{100} \equiv 2 \pmod{7}$.

Q4: (C) 720 — $2 \times 7^3 + 0 \times 7^2 + 4 \times 7 + 6 = 686 + 0 + 28 + 6 = 720$.

Q5: (B) 28 — $[60/3] + [60/9] + [60/27] = 20 + 6 + 2 = 28$.

Q6: (C) 84 — Multiples of 6 or 15 in 1–500: $83 + 33 - 16 = 100$ (multiples of 30 counted once). Remove the 16 multiples of 30, which are also multiples of 10: $100 - 16 = 84$.

PASSAGE 2 — ARCLINE DESIGN STUDIO (CHORDS & INSCRIBED FIGURES)

Q7: (D) 13 m — $r = (c^2/4 + s^2)/(2s) = (144 + 64)/16 = 13$.

Q8: (A) 338 m² — Diagonal of square = $2r = 26$, so area = $d^2/2 = 676/2 = 338$.

Q9: (B) 24 m — Length = $2\sqrt{(R^2 - r^2)} = 2\sqrt{(169 - 25)} = 2 \times 12 = 24$.

Q10: (C) $3\sqrt{3}/(2\pi)$ — Hexagon area = $(3\sqrt{3}/2)r^2$, circle area = πr^2 ; ratio = $3\sqrt{3}/(2\pi) \approx 0.827$.

Q11: (A) 4.5 m — $AP \times PB = CP \times PD$, so $4 \times 9 = 8 \times PD$, giving $PD = 4.5$.

Q12: (B) 60 m² — Distance from O to chord = $\sqrt{(13^2 - 5^2)} = 12$ (using $r = 13$ from Q7 and half-chord 5); area = $\frac{1}{2} \times 10 \times 12 = 60$.

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YOU ACHIEVE!*



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clatcommunity@gmail.com



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