

CLAT Community

daily QT

SECTIONAL TEST

42

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 NLUs.



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HRISHIT PODDAR



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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

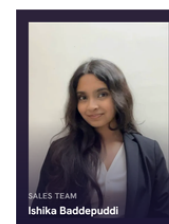
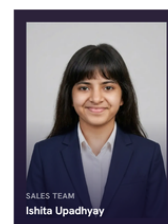
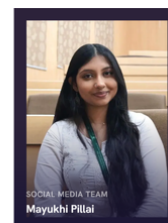
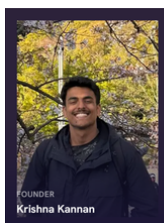
AND
MANY
MORE.

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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 — TERRASURVEY MAPPING: COORDINATE AREAS, CENTROIDS & COLLINEARITY

Terrasurvey Mapping digitises land parcels by recording the coordinates of each corner on a Cartesian grid, where one unit equals 10 metres. A surveyor has recorded a four-sided plot ABCD with corners at A(0, 0), B(6, 0), C(8, 5) and D(2, 7). Because the plot's edges are not parallel, the firm computes its area by splitting the shape into triangles or by applying the coordinate (shoelace) formula to the list of corners in order.

The shoelace method multiplies each corner's x-coordinate by the next corner's y-coordinate, subtracts the reverse products, sums the results around the boundary, and halves the absolute value. Surveyors apply the same method to any triangle formed by three recorded points, and they use the triangle's centroid, the average of its three corner coordinates, as a reference for placing sensors. Three points are collinear when they lie on one straight line, which the firm checks by comparing slopes between consecutive pairs of points.

Some design tasks need the triangle formed by one corner and two other corners, as well as triangles that use the origin, which the firm treats as a fixed survey mark. A consultant may also need to find a missing coordinate that makes three points collinear before a boundary is redrawn. Unless stated otherwise, all coordinates are given in units of 10 metres, and areas are reported in square units of that scale.

1. The area of quadrilateral ABCD, in square units, is:

- (A) 32
- (B) 38
- (C) 42
- (D) 44

2. The area of triangle ABD, in square units, is:

- (A) 18

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(B) 24

(C) 15

(D) 21

3. The area of the triangle formed by the origin O, point C and point D, in square units, is:

(A) 23

(B) 19

(C) 26

(D) 29

4. The x-coordinate of the centroid of triangle ABC is:

(A) 4

(B) 5

(C) $14/3$

(D) 3

5. The value of k for which the points (1, 2), (3, 8) and (k, 14) are collinear is:

(A) 5

(B) 4

(C) 6

(D) 7

6. The area of triangle BCD, in square units, is:

(A) 15

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(B) 19

(C) 17

(D) 21

PASSAGE 2 — SCORECRAFT ANALYTICS: MEAN, VARIANCE & STANDARD DEVIATION

Scorecraft Analytics evaluates the consistency of examination results by measuring how far individual scores lie from the average. A set of scores is first summarised by its mean, which is the sum of all values divided by their count. The population variance is then the average of the squared deviations from that mean, and the standard deviation is the square root of the variance. Analysts prefer the standard deviation because it is expressed in the same units as the scores.

The firm's reports follow a few standard conventions. When a sample rather than a complete population is analysed, the sum of squared deviations is divided by one less than the number of observations, which produces the sample variance. Adding a constant to every score shifts the mean but leaves the spread unchanged, while multiplying every score by a constant multiplies the standard deviation by the same constant. Analysts also report the range, which is the difference between the highest and lowest score, and the median, which is the middle value after sorting.

A common review question concerns the effect of replacing one extreme score with a different value. Such a change alters the mean and therefore every squared deviation, so the variance must be recomputed from scratch rather than adjusted by a simple shortcut. Unless stated otherwise, each data set below is treated as a complete population, and all answers should be read from the population formulas.

7. The mean of the scores 2, 4, 4, 4, 5, 5, 7, 9 is:

(A) 4

(B) 5

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(C) 6

(D) 3

8. The population variance of the scores 2, 4, 4, 4, 5, 5, 7, 9 is:

(A) 2

(B) 3

(C) 3.5

(D) 4

9. The population standard deviation of the scores 2, 4, 4, 4, 5, 5, 7, 9 is:

(A) 2

(B) 3.5

(C) 1.87

(D) 4

10. The population standard deviation of the scores obtained by adding 3 to each of 2, 4, 4, 4, 5, 5, 7, 9 is:

(A) 5

(B) 4

(C) 2

(D) 6

11. The sample variance (dividing by $n - 1$) of the scores 2, 4, 4, 4, 5, 5, 7, 9 is:

(A) 4

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(B) $32/7$

(C) 4.5

(D) $36/7$

12. After the score 9 in the set 2, 4, 4, 4, 5, 5, 7, 9 is replaced by 1, the population variance of the new set is:

(A) 3.5

(B) 4

(C) 2.5

(D) 3



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ANSWER KEY**PASSAGE 1 — TERRASURVEY MAPPING (COORDINATE GEOMETRY)**

Q1: (B) 38 — Shoelace sum: $(0 \cdot 0 - 6 \cdot 0) + (6 \cdot 5 - 8 \cdot 0) + (8 \cdot 7 - 2 \cdot 5) + (2 \cdot 0 - 0 \cdot 7) = 0 + 30 + 46 + 0 = 76$. Area = $76/2 = 38$.

Q2: (D) 21 — Area = $\frac{1}{2} |x_B \cdot y_D - x_D \cdot y_B| = \frac{1}{2} |6 \cdot 7 - 2 \cdot 0| = 21$.

Q3: (A) 23 — Area = $\frac{1}{2} |8 \cdot 7 - 2 \cdot 5| = \frac{1}{2} \times 46 = 23$.

Q4: (C) $14/3$ — Centroid x-coordinate = $(0 + 6 + 8)/3 = 14/3$.

Q5: (A) 5 — The slope from (1, 2) to (3, 8) is 3. For collinearity, $(14 - 8)/(k - 3) = 3$, so $k = 5$.

Q6: (C) 17 — With vectors $BC = (2, 5)$ and $BD = (-4, 7)$, area = $\frac{1}{2} |2 \cdot 7 - 5 \cdot (-4)| = \frac{1}{2} \times 34 = 17$.

PASSAGE 2 — SCORECRAFT ANALYTICS (MEAN, VARIANCE & STANDARD DEVIATION)

Q7: (B) 5 — Sum of the eight scores is 40, and $40/8 = 5$.

Q8: (D) 4 — Squared deviations from 5 are 9, 1, 1, 1, 0, 0, 4, 16 (total 32). Variance = $32/8 = 4$.

Q9: (A) 2 — Standard deviation = $\sqrt{4} = 2$.

Q10: (C) 2 — Adding a constant shifts the mean and leaves the spread unchanged, so the standard deviation stays 2.

Q11: (B) $32/7$ — Sample variance = $32/(8 - 1) = 32/7$.

Q12: (D) 3 — The new set 2, 4, 4, 4, 5, 5, 7, 1 has mean 4. Squared deviations total 24, so variance = $24/8 = 3$.

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