

CLAT Community

daily QT

SECTIONAL TEST

44

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



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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

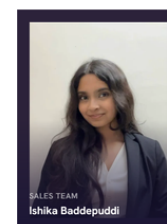
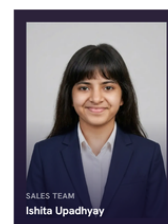
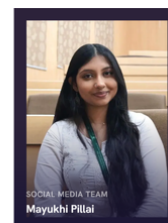
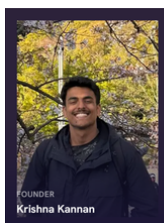
AND
MANY
MORE.

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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 — QUALISPARK MANUFACTURING: BAYES' THEOREM & DEFECT ANALYSIS

QualiSpark Manufacturing produces electronic sensors on three machines, M1, M2 and M3. Machine M1 produces 50% of the sensors, M2 produces 30%, and M3 produces the remaining 20%. Quality control has found that each machine produces defective sensors at a fixed rate: 2% for M1, 4% for M2 and 5% for M3. Every sensor leaving the factory is selected at random from the total output, so a sensor's machine of origin is known only after it has been tested.

The quality team uses conditional probability in two directions. The first question asks how likely a randomly chosen sensor is to be defective, which is found by weighting each machine's defect rate by its share of output. The second asks the reverse question: given that a sensor is defective, what is the chance it came from a particular machine? This reverse calculation is the core of Bayes' theorem, which divides the joint probability of the machine and the defect by the total probability of a defect.

The team also tracks sensors that pass inspection. Non-defective sensors form the complement of the defective set, so their probability is one minus the defect probability. For planning, the factory expects to test batches of 800 sensors at a time, and management wants the expected number of defective units per batch. Unless stated otherwise, each sensor is assumed to be independent of the others, and the machine shares remain fixed throughout the production run.

1. The probability that a randomly chosen sensor is defective is:

- (A) 2.2%
- (B) 3.2%
- (C) 4.2%
- (D) 5.0%

2. Given that a randomly chosen sensor is defective, the probability that it came from M2 is:

- (A) $\frac{1}{4}$

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(B) $\frac{3}{8}$

(C) $\frac{5}{16}$

(D) $\frac{1}{2}$

3. The probability that a randomly chosen sensor is NOT defective is:

(A) 0.932

(B) 0.972

(C) 0.968

(D) 0.958

4. Given that a randomly chosen sensor is defective, the probability that it came from M3 is:

(A) $\frac{3}{8}$

(B) $\frac{1}{4}$

(C) $\frac{3}{16}$

(D) $\frac{5}{16}$

5. The expected number of defective sensors in a batch of 800 is:

(A) 25.6

(B) 24

(C) 28.8

(D) 32

6. Given that a randomly chosen sensor is defective, the probability that it came from M1 or M3 is:

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- (A) $\frac{1}{2}$
- (B) $\frac{3}{8}$
- (C) $\frac{5}{8}$
- (D) $\frac{3}{4}$

PASSAGE 2 — DECIMAL DYNAMICS: RECURRING DECIMALS & INFINITE GEOMETRIC SERIES

Decimal Dynamics is a tutoring service that teaches learners to convert repeating decimals into fractions and to sum infinite geometric series. Its lessons begin with the observation that a repeating block of digits can be shifted by a power of ten and then subtracted from the original number, which removes the repetition. For example, the number $0.333\dots$ can be treated as the limit of repeated shifts, and the same trick applies to blocks with two or more digits.

The second part of the course covers infinite geometric series. A geometric series with first term a and common ratio r , where the absolute value of r is less than one, has a finite sum equal to a divided by one minus r . The course stresses that the series must converge before this formula is applied, and that the sign of the ratio affects the form of the sum. Students often confuse the sum of a series with the sum of its first few terms, so the lessons include several checks against partial sums.

The final lesson combines the two ideas. A repeating decimal may have a non-repeating part before the repeating block, and such numbers can be written as a sum of a finite decimal and an infinite geometric series. Practice problems ask learners to rewrite a given recurring decimal in lowest terms and then to identify the series that produces it. Unless stated otherwise, all series in the course have real terms and ratios.

7. The recurring decimal $0.363636\dots$ expressed in lowest terms is:

- (A) $\frac{3}{11}$
- (B) $\frac{4}{11}$
- (C) $\frac{9}{11}$

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(D) $12/11$

8. The recurring decimal $0.272727\dots$ expressed in lowest terms is:

(A) $3/11$

(B) $2/11$

(C) $27/100$

(D) $9/11$

9. The sum of the infinite series $1 + 1/3 + 1/9 + 1/27 + \dots$ is:

(A) 2

(B) $4/3$

(C) 1

(D) $3/2$

10. The sum of the infinite series $5 - 5/4 + 5/16 - 5/64 + \dots$ is:

(A) 4

(B) 3

(C) 5

(D) $20/3$

11. The recurring decimal $1.2333\dots$ expressed as a fraction in lowest terms is:

(A) $6/5$

(B) $35/30$

(C) $37/30$

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(D) $\frac{7}{6}$

12. A ball is dropped from a height of 3 m. After each bounce it rises to two-thirds of the height from which it last fell, and it keeps bouncing indefinitely. The total distance the ball travels before coming to rest in the limit is:

(A) 15 m

(B) 12 m

(C) 9 m

(D) 18 m



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ANSWER KEY**PASSAGE 1 — QUALISPARK MANUFACTURING (BAYES' THEOREM)**

Q1: (B) 3.2% — $0.5 \times 0.02 + 0.3 \times 0.04 + 0.2 \times 0.05 = 0.01 + 0.012 + 0.01 = 0.032$.

Q2: (B) $3/8$ — $P(M2 | \text{defective}) = 0.012 / 0.032 = 3/8$.

Q3: (C) 0.968 — $1 - 0.032 = 0.968$.

Q4: (D) $5/16$ — $P(M3 | \text{defective}) = 0.010 / 0.032 = 5/16$.

Q5: (A) 25.6 — $800 \times 0.032 = 25.6$.

Q6: (C) $5/8$ — $P(M1 | \text{defective}) = 5/16$ and $P(M3 | \text{defective}) = 5/16$, so the total is $10/16 = 5/8$.

PASSAGE 2 — DECIMAL DYNAMICS (RECURRING DECIMALS & INFINITE SERIES)

Q7: (B) $4/11$ — $0.363636... = 36/99 = 4/11$.

Q8: (A) $3/11$ — $0.272727... = 27/99 = 3/11$.

Q9: (D) $3/2$ — $a = 1$ and $r = 1/3$, so the sum is $1 / (1 - 1/3) = 3/2$.

Q10: (A) 4 — $a = 5$ and $r = -1/4$, so the sum is $5 / (1 + 1/4) = 4$.

Q11: (C) $37/30$ — $1.2333... = 6/5 + 1/30 = 36/30 + 1/30 = 37/30$.

Q12: (A) 15 m — Fall distance 3 m, then each bounce contributes $2 \times h_n$, where the heights form a series 2, $4/3$, $8/9$, ... of total $2 \times 3 \times (2/3)/(1 - 2/3) = 12$. Total = $3 + 12 = 15$ m.

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