BLOGS

Practice Questions from Quantitative Aptitude for CLAT UG

Adtiya Aryan · 21 Nov 2025

Passage 1:

A law coaching institute analyzed performance data of 500 CLAT aspirants from its 2024 batch across three subjects: English, Legal Reasoning, and Quantitative Techniques. Every student attempted all sections. The average scores in the three subjects were: English: 52 marks, Legal Reasoning: 64 marks, Quantitative Techniques: 38 marks. For internal evaluation, the institute created a Composite Performance Index (CPI) where each subject was given a different weight: English 30%, Legal Reasoning 50%, and Quantitative Techniques 20%.

Separately, the institute tracked improvement percentages after a 6-week revision module, but with a twist: improvements were conditional on baseline performance, only students scoring below the median (assumed 50% of cohort for each subject) were eligible, and the stated percentages applied only to them. The eligible proportions were: 45% for English (improved by 12% of their score), 55% for Legal Reasoning (improved by 9% of their score), and 65% for QT (improved by 22% of their score). Assume eligible students' baseline scores were 85% of the overall average for that subject, and non-eligible students (above median) improved by only 2% across all subjects due to ceiling effects. Non-improving students (ineligible or non-responsive) remained at original averages.

Questions:

1. What is the adjusted average English score for eligible improvers before the module, and what is the overall average CPI before the revision module? (Use the adjusted baseline for calculations.)

(A) 44.2 marks; 54.8

(B) 44.2 marks; 55.2

(C) 46.6 marks; 55.2

(D) 46.6 marks; 56.0

2. What is the new average QT score after the revision module, accounting for the ceiling effect on non-eligible students?

(A) 42.8

(B) 43.4

(C) 44.0

(D) 44.6

3. What is the percentage increase in the average Legal Reasoning score across all students, considering the differential improvements?

(A) 3.8%

(B) 4.2%

(C) 4.6%

(D) 5.0%

4. What is the new average CPI after including all improvements, rounded to one decimal place?

(A) 56.8

(B) 57.4

(C) 58.0

(D) 58.6

5. If the institute reallocates weights to 35% English, 45% Legal Reasoning, and 20% QT to balance post-improvement gains, by what percentage does the new CPI exceed the original weighted CPI (before revisions)?

(A) 5.2%

(B) 5.8%

(C) 6.4%

(D) 7.0%

Passage 2:

A National Law University library recorded data on student usage of digital and physical resources over a 4-week period. The university has 1,200 students, all of whom were counted. Students could access multiple resources: 52% accessed physical books, 68% accessed digital databases, 34% accessed both. The average weekly hours spent were: Physical books: 3.5 hours (but only 2.8 hours for exclusive users due to overlap inefficiencies), Databases: 4.2 hours (3.6 hours for exclusive users). The library plans a restructuring where weekly study hours are projected to increase as follows: Physical book users: 15% increase (but exclusive users gain an extra 5% bonus), Database users: 25% increase (exclusive users gain an extra 8% bonus), Students who access both resources benefit from a combined efficiency model that amplifies their base increase by 10% but then reduces the total projected increase by 18% of the amplified amount due to integration costs. Assume hour increases apply proportionately to adjusted exclusive rates, and dual users' base hours are the sum of adjusted exclusives plus 1.2 hours overlap premium.

Questions:

1. How many students accessed only physical books, and what is their adjusted average weekly hours before restructuring?

(A) 216; 2.8 hours

(B) 272; 3.2 hours

(C) 300; 2.8 hours

(D) 300; 3.2 hours

1. What is the total weekly hours spent by all exclusive database users before restructuring?

(A) 1,512

(B) 1,470

(C) 1,944

(D) 2,160

1. What would have been the amplified combined increased hours for dual-resource users before the 18% efficiency reduction?

(A) 1.42 hours

(B) 1.58 hours

(C) 1.74 hours

(D) 1.90 hours

1. What is the effective net increase in hours for dual-resource users after applying the amplification and reduction?

(A) 1.12

(B) 1.28

(C) 1.44

(D) 1.60

1. If the restructuring leads to a 12% overall drop in overlap inefficiencies (valued at 0.8 hours per dual user), what is the total projected weekly hours across all students after restructuring (rounded to nearest 10)?

(A) 6,240

(B) 6,450

(C) 6,660

(D) 6,870

Passage 3:

A law school allocates 300 students across three types of internships: Litigation Chambers, Corporate Firms, and Research Centres: 40% join Litigation (120 students), 35% join Corporate (105 students), and the rest (75 students) join Research. The average weekly workload is: Litigation 18 hours, Corporate 22 hours, Research 15 hours. Due to academic pressure, students are allowed to reduce their working hours, but with tiered reductions based on seniority: Junior interns (60% of each group) reduce by the stated base percentage, while seniors (40%) reduce by only half that amount. The base reductions are: 30% of Litigation interns reduce by 20%, 40% of Corporate interns reduce by 25%, 25% of Research interns reduce by 10%. Additionally, cross-group collaborations add 2 hours/week for 15% of Litigation and 20% of Research interns (but

deduct 1 hour from Corporate for coordination). The university wants to estimate the overall average weekly workload after reductions and adjustments.

Questions:

1. What is the tiered average reduction percentage for Corporate interns, and what is the total weekly workload of all students before any reductions or additions?

(A) 17.5%; 5,700 hours

(B) 17.5%; 5,940 hours

(C) 20%; 5,595 hours

(D) 20%; 5,940 hours

1. What is the adjusted new average workload for Litigation students after reductions and collaborations?

(A) 15.8 hours

(B) 16.4 hours

(C) 16.9 hours

(D) 17.5 hours

1. What is the total weekly workload of Research interns after reductions and collaboration additions?

(A) 1,102.5

(B) 1,125.0

(C) 1,147.5

(D) 1,170.0

1. What is the net percentage reduction in Corporate interns' total workload after accounting for the coordination deduction?

(A) 10.2%

(B) 11.4%

(C) 12.6%

(D) 13.8%

1. If the school aims for an overall average weekly workload of 18.5 hours post-adjustments by scaling up Research hours by a factor x, what is x (rounded to two decimals)?

(A) 1.12

(B) 1.18

(C) 1.24

(D) 1.30

Answer Key:

PASSAGE 1

Given data (summary):

- Cohort = 500 students. Subject averages: English = 52, Legal Reasoning = 64, QT = 38. CPI weights (original) = E 30%, LR 50%, QT 20%.
- Eligible proportions and improvements: English: 45% eligible, +12% (eligible); Legal Reasoning: 55% eligible, +9%; QT: 65% eligible, +22%.
- Eligible baseline = 85% of overall average for that subject.
- Non-eligible students get +2% (ceiling effect).
- Where needed I computed the implied non-eligible baseline so that the given overall average remains true.

Q1 — "What is the adjusted average English score for eligible improvers before the module, and what is the overall average CPI before the revision module?"

Step 1 — eligible baseline (English):

Eligible baseline = 0.85 × 52 = **44.2 marks**.

Step 2 — original CPI (use given subject averages)

CPI = 0.30×52 + 0.50×64 + 0.20×38

= 15.6 + 32 + 7.6 = **55.2**.

Answer: (B) 44.2 marks; 55.2.

(Explanation: eligible adjusted baseline = 44.2; CPI computed from the stated overall averages gives 55.2.)

Q2 — "What is the new average QT score after the revision module, accounting for ceiling effect on non-eligible students?"

Step A — compute eligible and non-eligible baselines:

Eligible baseline (QT) = 0.85 × 38 = **32.3**.

Let non-eligible baseline be xxx. Since overall average = 38:

0.65×32.3+0.35×x = 38.

Compute 0.65×32.3 = 20.995. So 0.35x = 17.005 ⇒ x = 17.005/0.35 = 48.585714…

Step B — apply improvements:

- Eligible improved by 22%: new eligible = 32.3 × 1.22 = 39.406.
- Non-eligible improved by 2%: new non-eligible = 48.585714… × 1.02 = 49.5584286.

Step C — weighted new average:

New QT average = 0.65×39.406 + 0.35×49.5584286

= 25.6139 + 17.34545 = **42.95935 ≈ 42.96**.

Rounded / closest option: The closest provided option is **(A) 42.8**, though the exact arithmetic gives **≈42.96 (≈43.0)**.

Answer: (A) 42.8 (closest to computed 42.96).

Q3 — "What is the percentage increase in the average Legal Reasoning score across all students?"

Step A — baselines:

Eligible baseline (LR) = 0.85 × 64 = **54.4**. Let non-eligible baseline = yyy.

0.55×54.4 + 0.45×y = 64 ⇒ 29.92 + 0.45y = 64 ⇒ 0.45y = 34.08 ⇒ y = **75.733333…**.

Step B — apply improvements:

- Eligible new = 54.4 × 1.09 = 59.296.
- Non-eligible new = 75.733333… × 1.02 = 77.247999….Step C — overall new average:

New LR average = 0.55×59.296 + 0.45×77.248 = 32.6128 + 34.7616 = **67.3744**.

Percentage Increase= 5.28%

Closest provided option: (D) 5.0% (the computed value is ≈ **5.28%**).

Q4 — "What is the new average CPI after including all improvements, rounded to one decimal place?"

We computed subject new averages:

- New English average (detailed):
  - Eligible baseline 44.2 → ×1.12 = 49.504
  - Non-eligible baseline (solve for z): 0.45×44.2 + 0.55×z = 52 ⇒ 19.89 + 0.55z = 52 ⇒ z = 58.381818…
  - Non-eligible new = z ×1.02 = 59.5494545…
  - New English average = 0.45×49.504 + 0.55×59.5494545 = 22.2768 + 32.7522 = 55.029 ≈ 55.03.
- New LR average = 67.3744 (from Q3).
- New QT average ≈ 42.95935 (from Q2).

Now new CPI = 0.30×55.029 + 0.50×67.3744 + 0.20×42.95935
= 16.5087 + 33.6872 + 8.59187 = **58.78777… ≈ 58.8** (rounded to one decimal).

Closest provided option: (D) 58.6. (Exact ≈ **58.8**; closest choice is **58.6**.)

Answer: (D) 58.6 (closest; exact ≈ **58.8**).

Q5 — "If the institute reallocates weights to 35% English, 45% LR, 20% QT, by what percentage does the new CPI exceed the original weighted CPI (before revisions)?"

- Original (pre-revision) CPI = 55.2 (from Q1).
- Post-revision subject averages: English ≈ 55.029, LR ≈ 67.3744, QT ≈ 42.95935.

New weighted CPI (with new weights) = 0.35×55.029 + 0.45×67.3744 + 0.20×42.95935 = 19.26015 + 30.31848 + 8.59187 = **58.1705**.

Percentage increase over original 55.2 = 5.38%.

Closest option: (A) 5.2% (closest; exact ≈ **5.38%**).

Answer: (A) 5.2% (closest; exact ≈ **5.38%**).

PASSAGE 2

Given data (summary):

- Total students = 1,200.
- Physical = 52% → 0.52×1200 = 624 students.
- Databases = 68% → 816 students.
- Both = 34% → 408 students. Thus:
- Only physical = 624 − 408 = 216 students.
- Only digital = 816 − 408 = 408 students.
- Neither = 1200 − (216 + 408 + 408) = 168 students.

Average weekly hours (before restructuring):

- Physical: 3.5 hours (but exclusive users use 2.8 hours). The 3.5 figure applies to overall physical users including dual users; exclusive physical users use 2.8.
- Databases: 4.2 overall; exclusive database users use 3.6.

Restructuring increases:

- Physical users: +15% base, but exclusive users get extra +5% (so exclusives: +20% total).
- Database users: +25% base, exclusive get extra +8% (so exclusives: +33% total).
- Dual users: base hours = (adjusted exclusive physical) + (adjusted exclusive database) + 1.2 overlap premium = 2.8 + 3.6 + 1.2 = 7.6 hours. Dual users' combined increase amount is computed from the exclusive increases, then amplified by 10% and reduced by 18% integration cost. (I follow the passage's explicit instruction to apply hour increases to "adjusted exclusive rates", then add overlap premium.)

Q6 — "How many students accessed only physical books, and what is their adjusted average weekly hours before restructuring?"

- Only physical = 216 students (computed).
- The exclusive physical average (given) before restructuring = 2.8 hours.

Answer (accurate from passage): 216; 2.8 hours.

Q7 — "Total weekly hours by all exclusive database users before restructuring?"

- Only database count = 408 students.
- Exclusive database hours per student before restructuring = 3.6. Total = 408 × 3.6 = 1,468.8 hours.

Answer (exact): 1,468.8 hours.

Q8 — "Amplified combined increased hours for dual-resource users *before* the 18% reduction?"

Compute exclusive increases first:

- Exclusive physical increase percent = 15% base + 5% exclusive bonus = 20% => increase in hours = 2.8 × 0.20 = 0.56 hours.
- Exclusive database increase percent = 25% base + 8% exclusive bonus = 33% => increase in hours = 3.6 × 0.33 = 1.188 hours.Combined base increase for a dual user (from the exclusives) = 0.56 + 1.188 = 1.748 hours.

Amplified by 10% → amplified amount = 1.748 × 1.10 = **1.9228** hours.

Answer (amplified, before 18% cut): ≈ 1.9228 hours ≈ 1.90 hours.

Closest MCQ option: (D) 1.90.

Q9 — "Effective net increase after amplification then 18% reduction?"

Net = amplified × (1 − 0.18) = 1.9228 × 0.82 = **1.576896 ≈ 1.58** hours.

Answer (exact): ≈ 1.577 hours.
Closest provided option set gave 1.60 as nearest acceptable choice — pick **(D) 1.60** if you must choose an offered option, but the exact net increase ≈ **1.58**.

Q10 — "If restructuring leads to a 12% overall drop in overlap inefficiencies (valued at 0.8 hours per dual user), what is the total projected weekly hours across all students after restructuring (rounded to nearest 10)?"

Step A — pre-restructuring aggregates (for reference):

- Only physical total = 216 × 2.8 = 604.8.
- Only database total = 408 × 3.6 = 1,468.8.
- Dual base hours per user = 7.6 → dual total = 408 × 7.6 = 3,100.8. Total before = 604.8 + 1,468.8 + 3,100.8 = 5,174.4.

Step B — post-restructuring new values:

- Only physical new per student = 2.8 × (1 + 0.20) = 3.36 → total = 216 × 3.36 = 725.76.
- Only database new per student = 3.6 × (1 + 0.33) = 3.6 × 1.33 = 4.788 → total = 408 × 4.788 = 1,953.504.
- Dual users: base 7.6; we add the net increase computed at Q4 (≈1.576896). So dual user new hours ≈ 7.6 + 1.576896 = 9.176896.

Step C — adjustment for 12% drop in overlap inefficiencies valued at 0.8 hours per dual user:

- If inefficiencies are "valued at 0.8 hours per dual user," a 12% drop in that inefficiency saves 0.12 × 0.8 = 0.096 hours per dual user — i.e., this is added to effective available hours. So adjusted dual per user = 9.176896 + 0.096 = 9.272896.
- Dual total = 408 × 9.272896 = 3,783.342 (approx).

Step D — grand total:

Total ≈ 725.76 + 1,953.504 + 3,783.342 = **6,462.606** ≈ **6,463**.

Rounded to nearest 10 → **6,460**.

Closest provided option: (B) 6,450 (very close to 6,460).

Answer: (B) 6,450 (closest). Exact calculation ≈ **6,462.6** → round ≈ **6,460**.

PASSAGE 3

Given:

- 300 students: Litigation 40% → 120, Corporate 35% → 105, Research rest → 75.
- Average weekly workload: Litigation 18, Corporate 22, Research 15.
- Base reductions (passage text): 30% of Litigation interns reduce by 20%, 40% of Corporate interns reduce by 25%, 25% of Research interns reduce by 10% — those are the base reduction proportions in the passage.
- Additionally the passage states a tiered reduction rule: juniors (60% of each group) reduce by the stated base percent, seniors (40% of each group) reduce by only half that amount. This language is ambiguous when combined with the "30% of Litigation interns reduce by 20%" phrasing. To be consistent and to match answer choices as closely as possible, I used this interpreting assumption:

Interpretation used for PASSAGE 3 (applied consistently):

- The "base reductions" like "30% of Litigation interns reduce by 20%" are the fractions of the group that actually change their hours. For those who reduce, juniors (constituting 60% of the group) reduce by the stated percent and seniors (40% of the group) reduce by half the stated percent. This yields results that are numerically consistent with the MCQ options provided for some questions.

Q11 — "What is the tiered average reduction percentage for Corporate interns, and what is the total weekly workload of all students before any reductions or additions?"

Total weekly workload before any changes (precise):

- Litigation: 120 × 18 = 2,160.
- Corporate: 105 × 22 = 2,310.
- Research: 75 × 15 = 1,125. Total = 2,160 + 2,310 + 1,125 = 5,595 hours.

Tiered average reduction for Corporate interns (by the interpretation used):

- For Corporate, stated base reduction = 25% (for those who reduce). Under the tiered rule juniors (60% of the group) reduce by full amount (25%) and seniors (40%) reduce by half (12.5%). If we compute the average reduction across the whole group (assuming all juniors and seniors participate proportionally in the reducing subset), the weighted average reduction = 0.60×25% + 0.40×12.5% = 15% + 5% = 20%.

Closest option: tiered reduction **= 20%** and closest provided total weekly workload, though exact total is **5,595**.

Answer (closest matching option): (C) 20%; 5,595

Q12 — "What is the adjusted new average workload for Litigation students after reductions and collaborations?"

Using interpretation that juniors reduce by full base % and seniors by half:

- For Litigation group: stated base reduction percent = 20% (for those who reduce). Under tiered rule juniors (60%) reduce by 20%; seniors (40%) reduce by 10%. Average reduction across all Litigation = 0.60×20% + 0.40×10% = 12% + 4% = 16%.
- Pre-collab average = 18 hours. After reduction average = 18 × (1 − 0.16) = 15.12.
- Collaboration: 15% of Litigation interns add +2 hours/week. Average addition across Litigation = 0.15 × 2 = 0.30.
- Final Litigation average = 15.12 + 0.30 = 15.42 hours.

Closest given option: (A) 15.8 (the exact result is **15.42**).

Answer (computed): ≈ 15.42 hours (option A is the closest).

Q13 — "What is the total weekly workload of Research interns after reductions and collaboration additions?"

Two natural interpretations (I provide the one that aligns best with given MCQ options):

Interpretation that matches options best: Only the stated *percentage* of each group reduces (i.e., 25% of Research interns reduce by 10%), while the rest remain unchanged. Then add collaboration additions for 20% of Research interns (+2 hours). (This interpretation yields values close to the provided options.)

Compute:

- For Research (75 students), base 15 hours.
- Those who reduce: 25% of 75 = 18.75 students reduce by 10% ⇒ their new hours = 15 × 0.90 = 13.5. Contribution = 18.75 × 13.5 = 253.125.
- Those who do not reduce: 75 − 18.75 = 56.25 students remain at 15 hours ⇒ contribution = 56.25 × 15 = 843.75.

- Combine before collaboration = 253.125 + 843.75 = 1,096.875.
- Collaboration addition: 20% of Research interns = 0.20 × 75 = 15 students each add +2 hours ⇒ total added hours = 15 × 2 = 30. So final total = 1,096.875 + 30 = 1,126.875 ≈ 1,126.88.

Closest option: (B) 1,125.0 (very close; computed ≈ **1,126.9**).

Answer (closest): (B) 1,125.0 (computed ≈ **1,126.9**).

Q14 "What is the net percentage reduction in Corporate interns' total workload after accounting for the coordination deduction?"

We use the same 'fraction reduce' interpretation to match MCQ options:

- Corporate: 105 interns, base hours 22.
- The passage stated "40% of Corporate interns reduce by 25%" (this is the base reductions line). So number reducing = 0.40 × 105 = 42 interns reduce by 25%.
- But there was also a tier: juniors and seniors — to keep consistent with options we use the base fraction approach (i.e., 40% reduce by 25%) rather than the earlier "60/40" variant. (Either interpretation should be stated; I use the base fraction method here.)
- Reduction: reduced group new hours = 22 × (1 − 0.25) = 16.5. Contribution from reducers = 42 × 16.5 = 693.
- Non-reducers: 63 interns remain at 22 → contribution = 63 × 22 = 1,386.
- Total before coordination deduction = 693 + 1,386 = 2,079.
- Coordination deduction: cross-group collaborations "deduct 1 hour from Corporate for coordination" (this is a per-student deduction for some subset). The passage says coordination deducts 1 hour from Corporate interns (no percent given) — a reasonable reading is that the deduction applies to participants in the collaboration; earlier it said cross-group collaborations deduct 1 hour from Corporate for coordination but gave the percent for who participates in other groups only. If the deduction applies to all Corporate interns, that would be 105 × 1 = 105 hours removed; if it applies only to those coordinating, we need the percent. The passage gives cross-group collaborations for Litigation (15%) and Research (20%) but says "(but deduct 1 hour from Corporate for coordination)" — ambiguous. The simplest interpretation that matches the MCQ options is to assume the deduction applies to all Corporate interns participating in coordination equal to the share of collaborators in the other groups combined. To keep this clear, I compute the reduction in total and then percentage reduction.

Simpler numeric route (matches MCQ): Apply a total coordination deduction of 1 hour × 105 interns = 105 hours (this is the largest reasonable effect). Then Corporate total after deduction = 2,079 − 105 = **1,974**.

Original Corporate total (before any reductions) = 105 × 22 = **2,310**. Net reduction = 2,310 − 1,974 = **336** hours.

Percentage reduction = 336 / 2,310 × 100% ≈ **14.545%**.

Closest MCQ options: 10.2%, 11.4%, 12.6%, 13.8% → **13.8%** is the closest to our 14.545%. Alternatively, if we assume deduction applied only to a subset, the percentage will vary and may match a provided option more closely.

Answer (closest): (D) 13.8% (under the reasonable coordination assumption; exact depends on coordination-scope interpretation).

Q15 — "If the school aims for overall average weekly workload of 18.5 hours post-adjustments by scaling up Research hours by a factor x, what is x (rounded to two decimals)?"

We use the computed totals (post reductions & collaboration) and solve for x so that overall average becomes 18.5.

Using the interpretations that matched earlier answers:

- Current post-adjustment totals (from the calculations above, rounded):
  - Litigation total after adjustments (from Q2): Litigation average ≈ 15.42 × 120 = 1,850.4 (but note this uses the 'all juniors/seniors' interpretation earlier).
  - Corporate total after reductions/coordination (from Q4): we used 1,974 (approx after deduction).
  - Research total after reductions & collaborations (from Q3) ≈ 1,126.875 (computed).

Sum current total = 1,850.4 + 1,974 + 1,126.875 = **4,951.275**.

To reach overall average of 18.5 for 300 students, target total = 300 × 18.5 = **5,550**.

We need to scale Research total (currently ≈ 1,126.875) by factor x so that:

New grand total = Litigation_total + Corporate_total + x × Research_total = 5,550.

So x = (5,550 − Litigation_total − Corporate_total) / Research_total

= (5,550 − 1,850.4 − 1,974) / 1,126.875

= (5,550 − 3,824.4) / 1,126.875 = 1,725.6 / 1,126.875 ≈ **1.531**.

Rounded to two decimals: **1.53**.

Closest MCQ option: They offered 1.12, 1.18, 1.24, 1.30 — none are near 1.53. Given the arithmetic above, required factor ≈ **1.53** (i.e., Research hours must be scaled by about **53%** increase).

Answer (computed): x ≈ 1.53 (none of the provided options match this exact result).