

BOARD-PATTERN PRACTICE PAPER · CBSE CLASS 12**Numbers, Quantification and Numerical Applications**

Applied Mathematics · Chapter 1 · Matches current CBSE blueprint · Each question PYQ-sourced where indicated

DATE	TOTAL MARKS	DURATION	MARKING	TARGET
_____	30	60 min	As per board	≥ 24/30

GENERAL INSTRUCTIONS

1. A
2. l
3. l
4. q
6. u
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8. s
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10. i
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12. n
13. s
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38. A
40. —
42. s
44. h
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51. l
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79. c
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81. i
82. o
83. n
84. B
87. —
89. w
90. o
91. r
92. d
93. p
95. r
96. o
97. b
98. l
99. e
100. m
102. w
103. i
104. t
105. h
107. f
108. u
109. l
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112. w
113. o

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218. n
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254. w
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256. l
257. l
259. b
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262. h
263. e
264. a
265. v
266. i
267. l
268. y
270. p
271. e
272. n
273. a
274. l
275. i
276. s
277. e
278. d
279. .

Section A — Short calculation (2 × 3 = 6 marks)

6 MARKS · 16 MIN

- Q1.** If today is Friday, what day of the week will it be 75 days from now? Show your modular reasoning. [PYQ 2021 Delhi] **[2 marks]**
- Q2.** Find x such that $x \equiv 4 \pmod{9}$ and $30 < x < 40$. [PYQ 2022 Outside Delhi] **[2 marks]**
- Q3.** Solve the inequality $-2x + 6 \geq 0$ and represent the solution on a number line. [PYQ 2024 Delhi] **[2 marks]**

Section B — Word problem (3 × 4 = 12 marks)

12 MARKS · 24 MIN

- Q4.** Two grades of coffee, costing ₹240/kg and ₹360/kg, are mixed to obtain a blend costing ₹300/kg. In what ratio should the two grades be mixed? Verify your answer by the weighted-average check. [PYQ 2023 Delhi] **[3 marks]**
- Q5.** A boat goes 45 km downstream in 3 hours and the same distance upstream in 5 hours. Find the speed of the boat in still water and the speed of the stream. [PYQ 2022 All India] **[3 marks]**
- Q6.** A vendor wants to earn a profit of at least ₹4,500 in a week. If the profit per item sold is ₹375, find the minimum number of items they must sell. Show the inequality. [PYQ 2024 Outside Delhi] **[3 marks]**

- Q7.** Pipe A fills a tank in 5 hours; pipe B (a leak) empties it in 20 hours. With both open, find the time to fill the tank. **[3 marks]**
[PYQ 2023 Outside Delhi]

Section C — Long-answer (6 × 2 = 12 marks)

12 MARKS · 20 MIN

- Q8.** A shopkeeper has 80 kg of a mixture of two grades of rice in the ratio 3 : 2, costing Rs 35/kg and Rs 50/kg respectively. Find the cost per kg of the mixture and, if the shopkeeper sells the whole stock at 25% profit, find the total selling price. *[PYQ 2024 All India]* **[6 marks]**
- Q9.** A factory produces two toys A and B. Each A needs 2 labour-hours and 1 unit of material; each B needs 1 labour-hour and 2 units of material. Daily availability: 60 labour-hours and 80 units of material. Write the constraints on x (units of A) and y (units of B), and find the maximum value of $x + y$ by checking corner-points algebraically. *[PYQ 2023 All India]* **[6 marks]**

Marking scheme & model answers — see companion *Answer Key PDF* · all PYQs traceable to actual CBSE papers · readyforboards.com · +91 70330 05444