

NMAT Quantitative Skills

Sample Paper – 6

Duration: 52 Minutes

Maximum Marks: 108

Instructions

- This paper contains **36** Multiple Choice Questions (Single Correct Answer), modelled on the Quantitative Skills section of **NMAT** by GMAC.
- Each correct answer carries **+3 marks**. There is **no negative marking** for incorrect or unattempted answers, so attempt every question.
- Only **one** option is correct. Choose the most appropriate answer.
- NMAT is a computer-based test with sectional time limits; attempt this practice paper in one timed sitting of about **52 minutes**.
- Use of mobile phones, dictionaries or electronic gadgets is prohibited; a basic on-screen calculator is allowed in NMAT, but practise mental methods.

Part A: Arithmetic

- Q1.** In a class, 45% of the students are girls. If there are 66 boys in the class, how many students are there in all?
- (A) 100
(B) 120
(C) 110
(D) 132
- Q2.** A trader buys a bicycle for Rs. 2500 and sells it at a loss of 12%. Find the selling price of the bicycle.
- (A) Rs. 2100
(B) Rs. 2200



(C) Rs. 2300

(D) Rs. 2000

Q3. A sum of Rs. 4200 is divided between X and Y in the ratio 4 : 3. Find X's share.

(A) Rs. 2400

(B) Rs. 1800

(C) Rs. 2100

(D) Rs. 2800

Q4. The average of 4 numbers is 18. When a fifth number is included, the average of all five becomes 20. Find the fifth number.

(A) 24

(B) 25

(C) 26

(D) 28

Q5. A train travels a distance of 360 km in 5 hours. Find the average speed of the train in km/h.

(A) 72

(B) 65

(C) 70

(D) 75

Q6. P can complete a piece of work in 12 days and Q can complete the same work in 24 days. Working together, in how many days will they finish the work?

(A) 6

(B) 18

(C) 8



(D) 36

Q7. Find the simple interest on Rs. 6000 at the rate of 9% per annum for 4 years.

(A) Rs. 2160

(B) Rs. 2000

(C) Rs. 2400

(D) Rs. 1800

Q8. Find the compound interest on Rs. 12000 at 10% per annum, compounded annually, for 2 years.

(A) Rs. 2400

(B) Rs. 2600

(C) Rs. 2450

(D) Rs. 2520

Q9. In what ratio must tea costing Rs. 50 per kg be mixed with tea costing Rs. 80 per kg so that the mixture is worth Rs. 60 per kg?

(A) 1 : 2

(B) 3 : 2

(C) 2 : 1

(D) 1 : 1

Q10. A invests Rs. 5000 and B invests Rs. 7000 in a business for the same period. If the total annual profit is Rs. 3600, find B's share of the profit.

(A) Rs. 1500

(B) Rs. 2100

(C) Rs. 1800

(D) Rs. 2400



Part B: Algebra and Number System

Q11. Solve for x : $5x - 3 = 27$.

- (A) 4
- (B) 5
- (C) 6
- (D) 7

Q12. The equation $x^2 - 9x + 20 = 0$ has two real roots. What is the larger of the two roots?

- (A) 2
- (B) 4
- (C) 5
- (D) 6

Q13. Simplify: $3^2 \times 3^3$.

- (A) 243
- (B) 729
- (C) 81
- (D) 27

Q14. Find the highest common factor (HCF) of 24 and 36.

- (A) 6
- (B) 8
- (C) 12
- (D) 72

Q15. Find the 8th term of the arithmetic progression 5, 9, 13, ...

- (A) 29



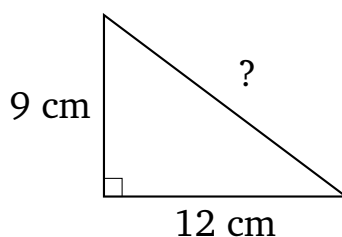
- (B) 33
- (C) 37
- (D) 41

Q16. Simplify using the order of operations: $20 - 4 + 6 \times 3 \div 2$.

- (A) 21
- (B) 23
- (C) 25
- (D) 27

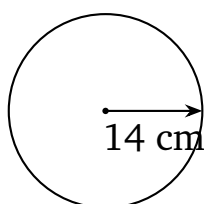
Part C: Geometry and Mensuration

Q17. In the right-angled triangle shown, the two legs measure 9 cm and 12 cm. Find the length of the hypotenuse.



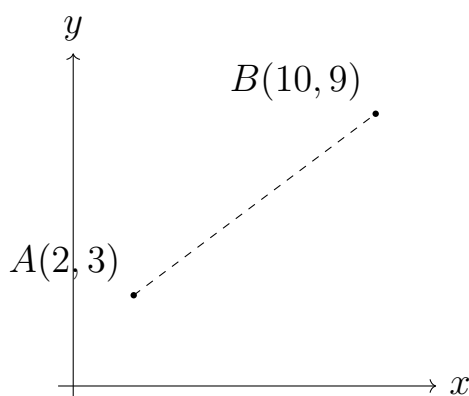
- (A) 18 cm
- (B) 21 cm
- (C) 13 cm
- (D) 15 cm

Q18. The circle shown has radius 14 cm. Find its area. (Take $\pi = \frac{22}{7}$.)



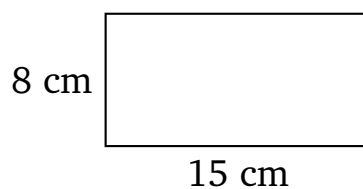
- (A) 44 cm^2
- (B) 88 cm^2
- (C) 154 cm^2
- (D) 616 cm^2

Q19. Find the distance between the points $A(2, 3)$ and $B(10, 9)$ shown on the coordinate plane.



- (A) 8
- (B) 6
- (C) 10
- (D) 14

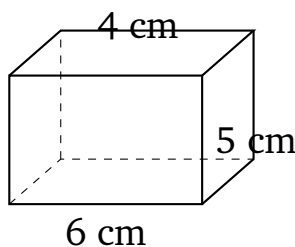
Q20. The rectangle shown has length 15 cm and breadth 8 cm. Find its area.



- (A) 46 cm^2
- (B) 23 cm^2
- (C) 92 cm^2
- (D) 120 cm^2



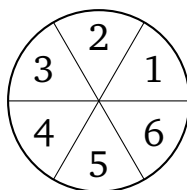
- Q21.** The cuboid shown has length 6 cm, height 5 cm and depth 4 cm. Find its volume.



- (A) 15 cm^3
- (B) 74 cm^3
- (C) 148 cm^3
- (D) 120 cm^3

Part D: Modern Maths

- Q22.** A fair spinner is divided into 6 equal sectors numbered 1 to 6, as shown. If the spinner is spun once, what is the probability that the arrow stops on an even number?



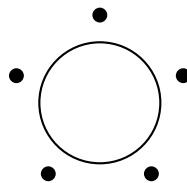
- (A) $\frac{1}{3}$
- (B) $\frac{1}{2}$
- (C) $\frac{2}{3}$
- (D) $\frac{1}{6}$

- Q23.** In how many ways can a team of 3 members be chosen from a group of 7 people?



- (A) 21
- (B) 210
- (C) 42
- (D) 35

Q24. In how many ways can 5 friends be seated around a circular table, as shown? (Two arrangements are the same if one is a rotation of the other.)



- (A) 24
- (B) 120
- (C) 5
- (D) 20

Part E: Data Interpretation

Data Set I (Q25–Q28): The table below shows the number of passengers carried by five trains T1, T2, T3, T4 and T5 on three days: Monday, Tuesday and Wednesday.

Train	Monday	Tuesday	Wednesday
T1	300	320	280
T2	250	270	260
T3	400	380	420
T4	350	330	340
T5	200	220	210

Q25. What is the total number of passengers carried by all five trains together on Wednesday?



- (A) 1490
- (B) 1510
- (C) 1530
- (D) 1470

Q26. Which train carried the largest number of passengers over the three days taken together?

- (A) T3
- (B) T4
- (C) T1
- (D) T5

Q27. On Tuesday, the passengers carried by train T3 formed what percentage of the total passengers carried by all five trains on that day?

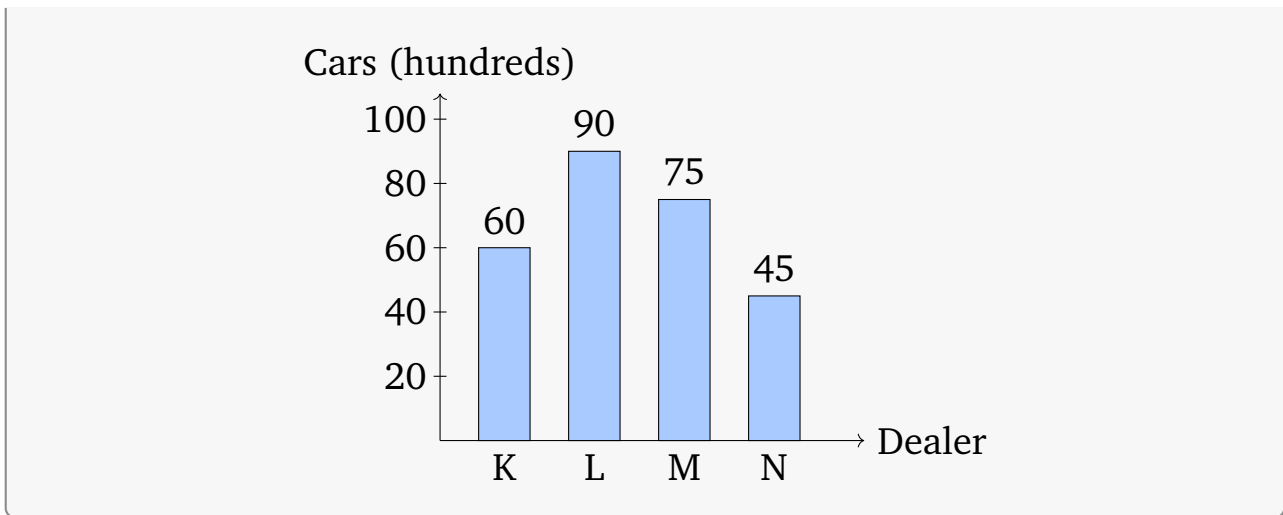
- (A) 20%
- (B) 22.5%
- (C) 25%
- (D) 30%

Q28. What is the ratio of the passengers carried by train T1 on Monday to the passengers carried by train T5 on Monday?

- (A) 2 : 3
- (B) 3 : 2
- (C) 5 : 4
- (D) 4 : 5

Data Set II (Q29–Q32): The bar chart below shows the number of cars sold (in hundreds) by four dealers K, L, M and N during one year.





- Q29.** What is the total number of cars sold (in hundreds) by all four dealers together during the year?
- (A) 270
(B) 250
(C) 260
(D) 280
- Q30.** What is the difference (in hundreds) between the number of cars sold by the dealer with the highest sales and the dealer with the lowest sales?
- (A) 30
(B) 20
(C) 15
(D) 45
- Q31.** The number of cars sold by dealer L is what percentage more than the number of cars sold by dealer K?
- (A) 20%
(B) 40%
(C) 30%
(D) 50%



- Q32.** What is the average number of cars sold (in hundreds) per dealer during the year?
- (A) 67.5
 - (B) 65
 - (C) 70
 - (D) 60

Part F: Data Sufficiency

Directions (Q33–Q36): Each question below is followed by two statements, I and II. Decide whether the information in the statements is sufficient to answer the question and choose from the standard options given with each question.

- Q33.** What is the value of y ?
- I. y is an even number less than 10.
 - II. $3y = 21$.
- (A) Statement I alone is sufficient, but statement II alone is not.
 - (B) Statement II alone is sufficient, but statement I alone is not.
 - (C) Both statements together are sufficient, but neither alone is.
 - (D) Each statement alone is sufficient.
- Q34.** What is the area of a rectangle?
- I. The length is 8 cm and the breadth is 5 cm.
 - II. The perimeter of the rectangle is 26 cm.
- (A) Statement I alone is sufficient, but statement II alone is not.
 - (B) Statement II alone is sufficient, but statement I alone is not.
 - (C) Both statements together are sufficient, but neither alone is.
 - (D) Each statement alone is sufficient.
- Q35.** What are the values of the two numbers x and y ?
- I. $x + y = 10$.
 - II. $x - y = 4$.



- (A) Statement I alone is sufficient, but statement II alone is not.
- (B) Statement II alone is sufficient, but statement I alone is not.
- (C) Both statements together are sufficient, but neither alone is.
- (D) Each statement alone is sufficient.

Q36. Is the positive integer n divisible by 6?

I. n is divisible by 3.

II. n is divisible by 12.

- (A) Statement I alone is sufficient, but statement II alone is not.
- (B) Statement II alone is sufficient, but statement I alone is not.
- (C) Both statements together are sufficient, but neither alone is.
- (D) Each statement alone is sufficient.



Detailed Solutions

Q1.

Solution

Concept — Percentage: If one group is a certain percentage, the remaining group is the balance of 100%, and both percentages are taken on the same total.

Step 1: Girls = 45%, so boys = $100\% - 45\% = 55\%$.

Step 2: The 55% who are boys equal 66 students.

Step 3: So 55% of Total = 66.

Step 4: $\frac{55}{100} \times \text{Total} = 66$.

Step 5: Total = $66 \times \frac{100}{55}$.

Step 6: Total = $66 \times \frac{20}{11} = 6 \times 20 = 120$.

Why other options are wrong:

- Option A (100): 55% of it = 55, not 66.
- Option C (110): 55% of it = 60.5, not 66.
- Option D (132): 55% of it = 72.6, not 66.

Final Answer: 120 students $\Rightarrow$ B

Answer: (B) [Go Back to Q1](#)

Q2.

Solution

Concept — Profit and Loss: Selling price = Cost price – Loss, where Loss = Loss% of Cost price.

Step 1: Cost price = Rs. 2500, Loss = 12%.

Step 2: Loss = $\frac{12}{100} \times 2500$.

Step 3: Loss = $12 \times 25 = 300$.

Step 4: Selling price = $2500 - 300 = 2200$.

Why other options are wrong:

- Option A (2100): uses a wrong loss of Rs. 400.



- Option C (2300): uses only 8% loss (= 200).
- Option D (2000): uses 20% loss (= 500).

Final Answer: Rs. 2200 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q2](#)

Q3.

Solution

Concept — Ratio and Proportion: A share equals its ratio part divided by the sum of parts, times the total amount.

Step 1: Ratio $X : Y = 4 : 3$, so total parts = $4 + 3 = 7$.

Step 2: X's part = 4 out of 7.

Step 3: X's share = $\frac{4}{7} \times 4200$.

Step 4: $\frac{4200}{7} = 600$, so X's share = $4 \times 600 = 2400$.

Why other options are wrong:

- Option B (1800): this is Y's share, not X's.
- Option C (2100): this is an equal half-split, ignoring the ratio.
- Option D (2800): uses a wrong ratio part.

Final Answer: Rs. 2400 $\Rightarrow$ **A**

Answer: (A) [Go Back to Q3](#)

Q4.

Solution

Concept — Averages: Sum = Average $\times$ Count. The added value equals the new sum minus the old sum.

Step 1: Sum of 4 numbers = $18 \times 4 = 72$.

Step 2: After adding the fifth number, there are 5 numbers with average 20.

Step 3: Sum of 5 numbers = $20 \times 5 = 100$.

Step 4: Fifth number = $100 - 72 = 28$.

Why other options are wrong:



- Option A (24): gives a new sum of 96, average 19.2, not 20.
- Option B (25): gives a new sum of 97, average 19.4, not 20.
- Option C (26): gives a new sum of 98, average 19.6, not 20.

Final Answer: 28 $\Rightarrow$ D

Answer: (D) [Go Back to Q4](#)

Q5.

Solution

Concept — Speed, Time and Distance: $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$.

Step 1: Distance = 360 km, Time = 5 hours.

Step 2: $\text{Speed} = \frac{360}{5}$.

Step 3: Speed = 72 km/h.

Why other options are wrong:

- Option B (65): would cover only $65 \times 5 = 325$ km.
- Option C (70): would cover only 350 km.
- Option D (75): would cover 375 km, more than 360.

Final Answer: 72 km/h $\Rightarrow$ A

Answer: (A) [Go Back to Q5](#)

Q6.

Solution

Concept — Time and Work: Add the one-day work of each worker to get the combined one-day work, then take the reciprocal.

Step 1: P's one-day work = $\frac{1}{12}$.

Step 2: Q's one-day work = $\frac{1}{24}$.

Step 3: Combined one-day work = $\frac{1}{12} + \frac{1}{24}$.

Step 4: Take LCM of 12 and 24, which is 24: $\frac{2}{24} + \frac{1}{24} = \frac{3}{24}$.



Step 5: $\frac{3}{24} = \frac{1}{8}$.

Step 6: Time together = $\frac{1}{1/8} = 8$ days.

Why other options are wrong:

- Option A (6): faster than the combined rate allows.
- Option B (18): this is close to the average of 12 and 24, not the work rule.
- Option D (36): sums the days, which is incorrect.

Final Answer: 8 days $\Rightarrow$

Answer: (C) [Go Back to Q6](#)

Q7.

Solution

Concept — Simple Interest: $SI = \frac{P \times R \times T}{100}$.

Step 1: $P = 6000, R = 9, T = 4$.

Step 2: $SI = \frac{6000 \times 9 \times 4}{100}$.

Step 3: Numerator = $6000 \times 9 = 54000$.

Step 4: $54000 \times 4 = 216000$.

Step 5: $SI = \frac{216000}{100} = 2160$.

Why other options are wrong:

- Option B (2000): uses a wrong rate or time.
- Option C (2400): uses 10% instead of 9%.
- Option D (1800): uses 3 years instead of 4.

Final Answer: Rs. 2160 $\Rightarrow$

Answer: (A) [Go Back to Q7](#)



Q8.

Solution

Concept — Compound Interest: $\text{Amount} = P \left(1 + \frac{R}{100} \right)^T$, and $\text{CI} = \text{Amount} - P$.

Step 1: $P = 12000, R = 10, T = 2$.

Step 2: Growth factor per year $= 1 + \frac{10}{100} = 1.1$.

Step 3: $\text{Amount} = 12000 \times 1.1 \times 1.1$.

Step 4: $12000 \times 1.1 = 13200$.

Step 5: $13200 \times 1.1 = 14520$.

Step 6: $\text{CI} = 14520 - 12000 = 2520$.

Why other options are wrong:

- Option A (2400): this is only the simple interest.
- Option B (2600): uses a wrong second-year base.
- Option C (2450): arithmetic slip on the compounding.

Final Answer: Rs. 2520 $\Rightarrow$ D

Answer: (D) [Go Back to Q8](#)

Q9.

Solution

Concept — Alligation: $\text{Ratio} = \frac{\text{Dearer price} - \text{Mean}}{\text{Mean} - \text{Cheaper price}}$ for (cheaper : dearer).

Step 1: Cheaper = 50, dearer = 80, mean = 60.

Step 2: $\text{Dearer} - \text{Mean} = 80 - 60 = 20$.

Step 3: $\text{Mean} - \text{Cheaper} = 60 - 50 = 10$.

Step 4: Ratio (cheaper : dearer) = 20 : 10.

Step 5: Divide both by 10: 20 : 10 = 2 : 1.

Why other options are wrong:

- Option A (1:2): reverses the two tea types.



- Option B (3:2): comes from an incorrect subtraction.
- Option D (1:1): would give a mean of Rs. 65, not Rs. 60.

Final Answer: $2 : 1 \Rightarrow$ C

Answer: (C) [Go Back to Q9](#)

Q10.

Solution

Concept — Partnership: For equal time periods, profit is shared in the ratio of the amounts invested.

Step 1: A : B investments = 5000 : 7000.

Step 2: Divide both by 1000: 5000 : 7000 = 5 : 7.

Step 3: Total parts = $5 + 7 = 12$.

Step 4: B's part = 7 out of 12.

Step 5: B's share = $\frac{7}{12} \times 3600 = 7 \times 300 = 2100$.

Why other options are wrong:

- Option A (1500): this is A's share.
- Option C (1800): an equal split, ignoring the ratio.
- Option D (2400): uses a wrong ratio part.

Final Answer: Rs. 2100 $\Rightarrow$ B

Answer: (B) [Go Back to Q10](#)

Q11.

Solution

Concept — Linear Equation: Isolate x by undoing subtraction first, then division.

Step 1: $5x - 3 = 27$.

Step 2: Add 3 to both sides: $5x = 27 + 3$.

Step 3: $5x = 30$.

Step 4: Divide both sides by 5: $x = \frac{30}{5}$.



Step 5: $x = 6$.

Why other options are wrong:

- Option A (4): gives $5(4) - 3 = 17$, not 27.
- Option B (5): gives $5(5) - 3 = 22$, not 27.
- Option D (7): gives $5(7) - 3 = 32$, not 27.

Final Answer: $x = 6 \Rightarrow$ C

Answer: (C) [Go Back to Q11](#)

Q12.

Solution

Concept — Quadratic Equation: Factorise into two brackets whose product is the constant and sum is the middle coefficient.

Step 1: $x^2 - 9x + 20 = 0$.

Step 2: Find two numbers with product 20 and sum 9: these are 4 and 5.

Step 3: Factorise: $(x - 4)(x - 5) = 0$.

Step 4: So $x = 4$ or $x = 5$.

Step 5: The larger root is 5.

Why other options are wrong:

- Option A (2) and Option D (6): are not roots of the equation.
- Option B (4): is a root, but it is the smaller one.

Final Answer: Larger root = 5 $\Rightarrow$ C

Answer: (C) [Go Back to Q12](#)

Q13.

Solution

Concept — Indices: When multiplying powers with the same base, add the exponents: $a^m \times a^n = a^{m+n}$.

Step 1: $3^2 \times 3^3 = 3^{2+3}$.

Step 2: $3^{2+3} = 3^5$.



Step 3: $3^5 = 243$.

Why other options are wrong:

- Option B (729): equals 3^6 , from adding wrongly.
- Option C (81): equals 3^4 .
- Option D (27): equals 3^3 .

Final Answer: $243 \Rightarrow$ A

Answer: (A) [Go Back to Q13](#)

Q14.

Solution

Concept — HCF: The HCF is found by taking the lowest power of each prime common to both numbers.

Step 1: Prime factorise: $24 = 2^3 \times 3$.

Step 2: Prime factorise: $36 = 2^2 \times 3^2$.

Step 3: Common prime 2: lowest power is 2^2 ; common prime 3: lowest power is 3^1 .

Step 4: $\text{HCF} = 2^2 \times 3 = 4 \times 3$.

Step 5: $\text{HCF} = 12$.

Why other options are wrong:

- Option A (6): a common factor, but not the highest.
- Option B (8): divides 24 but not 36.
- Option D (72): this is the LCM, not the HCF.

Final Answer: $12 \Rightarrow$ C

Answer: (C) [Go Back to Q14](#)

Q15.

Solution

Concept — Arithmetic Progression: The n th term is $a_n = a + (n - 1)d$, where a is the first term and d is the common difference.



Step 1: First term $a = 5$.

Step 2: Common difference $d = 9 - 5 = 4$.

Step 3: For the 8th term, $n = 8$: $a_8 = 5 + (8 - 1) \times 4$.

Step 4: $a_8 = 5 + 7 \times 4$.

Step 5: $a_8 = 5 + 28 = 33$.

Why other options are wrong:

- Option A (29): this is the 7th term.
- Option C (37): this is the 9th term.
- Option D (41): this is the 10th term.

Final Answer: $33 \Rightarrow$ B

Answer: (B) [Go Back to Q15](#)

Q16.

Solution

Concept — Order of Operations (BODMAS): Do multiplication and division before addition and subtraction.

Step 1: Expression: $20 - 4 + 6 \times 3 \div 2$.

Step 2: Multiply first: $6 \times 3 = 18$.

Step 3: Divide next: $18 \div 2 = 9$.

Step 4: Rewrite: $20 - 4 + 9$.

Step 5: Add and subtract left to right: $20 - 4 = 16$, then $16 + 9 = 25$.

Why other options are wrong:

- Option A (21): from a wrong order of operations.
- Option B (23): from mishandling the division.
- Option D (27): from dividing before multiplying.

Final Answer: $25 \Rightarrow$ C

Answer: (C) [Go Back to Q16](#)



Q17.

Solution

Concept — Pythagoras Theorem: In a right triangle, $(\text{hypotenuse})^2 = (\text{leg})^2 + (\text{leg})^2$.

Step 1: The legs are 9 cm and 12 cm.

Step 2: $\text{Hypotenuse}^2 = 9^2 + 12^2$.

Step 3: $9^2 = 81$ and $12^2 = 144$.

Step 4: $\text{Hypotenuse}^2 = 81 + 144 = 225$.

Step 5: $\text{Hypotenuse} = \sqrt{225} = 15 \text{ cm}$.

Why other options are wrong:

- Option A (18): its square 324 exceeds 225.
- Option B (21): comes from adding the legs $9 + 12$, which is wrong.
- Option C (13): too small; its square is only 169.

Final Answer: 15 cm $\Rightarrow$ D

Answer: (D) [Go Back to Q17](#)

Q18.

Solution

Concept — Area of a Circle: $\text{Area} = \pi r^2$.

Step 1: Radius $r = 14 \text{ cm}$, and $\pi = \frac{22}{7}$.

Step 2: $\text{Area} = \frac{22}{7} \times 14^2$.

Step 3: $14^2 = 196$.

Step 4: $\text{Area} = \frac{22}{7} \times 196$.

Step 5: $\frac{196}{7} = 28$, so $\text{Area} = 22 \times 28$.

Step 6: $\text{Area} = 616 \text{ cm}^2$.

Why other options are wrong:

- Option A (44): this is the value of 2π -style slip, far too small.



- Option B (88): this is the circumference $2\pi r$, not the area.
- Option C (154): this is the area for radius 7 cm, not 14 cm.

Final Answer: $616 \text{ cm}^2 \Rightarrow \boxed{\text{D}}$

Answer: (D) [Go Back to Q18](#)

Q19.

Solution

Concept — Distance Formula: $\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

Step 1: $A(2, 3)$ and $B(10, 9)$.

Step 2: $x_2 - x_1 = 10 - 2 = 8$.

Step 3: $y_2 - y_1 = 9 - 3 = 6$.

Step 4: $\text{Distance} = \sqrt{8^2 + 6^2}$.

Step 5: $= \sqrt{64 + 36} = \sqrt{100}$.

Step 6: $\text{Distance} = 10$.

Why other options are wrong:

- Option A (8): only the horizontal gap, not the diagonal.
- Option B (6): only the vertical gap, not the diagonal.
- Option D (14): equals $8 + 6$, from adding instead of using squares.

Final Answer: $10 \Rightarrow \boxed{\text{C}}$

Answer: (C) [Go Back to Q19](#)

Q20.

Solution

Concept — Area of a Rectangle: $\text{Area} = \text{length} \times \text{breadth}$.

Step 1: $\text{Length} = 15 \text{ cm}$, $\text{breadth} = 8 \text{ cm}$.

Step 2: $\text{Area} = 15 \times 8$.

Step 3: $\text{Area} = 120 \text{ cm}^2$.

Why other options are wrong:



- Option A (46): this is the perimeter $2(15 + 8)$, not the area.
- Option B (23): this is half the perimeter, $15 + 8$.
- Option C (92): this is twice the perimeter, an incorrect result.

Final Answer: $120 \text{ cm}^2 \Rightarrow \boxed{\text{D}}$

Answer: (D) [Go Back to Q20](#)

Q21.

Solution

Concept — Volume of a Cuboid: $\text{Volume} = \text{length} \times \text{breadth} \times \text{height}$.

Step 1: Length = 6 cm, height = 5 cm, depth = 4 cm.

Step 2: Volume = $6 \times 5 \times 4$.

Step 3: $6 \times 5 = 30$.

Step 4: $30 \times 4 = 120$.

Step 5: Volume = 120 cm^3 .

Why other options are wrong:

- Option A (15): equals $6 + 5 + 4$, from adding.
- Option B (74): equals half the surface area, not the volume.
- Option C (148): equals the total surface area $2(30 + 24 + 20)$.

Final Answer: $120 \text{ cm}^3 \Rightarrow \boxed{\text{D}}$

Answer: (D) [Go Back to Q21](#)

Q22.

Solution

Concept — Probability: $\text{Probability} = \frac{\text{favourable outcomes}}{\text{total outcomes}}$.

Step 1: Total outcomes = 6 (sectors 1 to 6).

Step 2: Even numbers between 1 and 6 are 2, 4, 6.

Step 3: Count of favourable outcomes = 3.

Step 4: Probability = $\frac{3}{6}$.



Step 5: $\frac{3}{6} = \frac{1}{2}$.

Why other options are wrong:

- Option A (1/3): would count only 2 favourable outcomes.
- Option C (2/3): would count 4 even numbers, but there are only 3.
- Option D (1/6): would count only 1 favourable outcome.

Final Answer: $\frac{1}{2} \Rightarrow \boxed{\text{B}}$

Answer: (B) [Go Back to Q22](#)

Q23.

Solution

Concept — Combinations: The number of ways to choose r from n is ${}^nC_r = \frac{n!}{r!(n-r)!}$.

Step 1: Here $n = 7$ and $r = 3$.

Step 2: ${}^7C_3 = \frac{7 \times 6 \times 5}{3 \times 2 \times 1}$.

Step 3: Numerator $= 7 \times 6 \times 5 = 210$.

Step 4: Denominator $= 3 \times 2 \times 1 = 6$.

Step 5: ${}^7C_3 = \frac{210}{6} = 35$.

Why other options are wrong:

- Option A (21): this is 7C_2 , choosing 2 not 3.
- Option B (210): this is 7P_3 (order counted), not a team.
- Option C (42): does not match the formula.

Final Answer: $35 \Rightarrow \boxed{\text{D}}$

Answer: (D) [Go Back to Q23](#)

Q24.

Solution

Concept — Circular Permutation: The number of ways to seat n people around a round table is $(n-1)!$.



Step 1: Here $n = 5$.

Step 2: Number of ways $= (5 - 1)!$.

Step 3: $= 4!$.

Step 4: $4! = 4 \times 3 \times 2 \times 1 = 24$.

Why other options are wrong:

- Option B (120): this is $5!$, the count for a straight row, not a circle.
- Option C (5): far too small.
- Option D (20): does not match the circular rule.

Final Answer: $24 \Rightarrow$ A

Answer: (A) [Go Back to Q24](#)

Q25.

Solution

Concept — Table Reading (Total): Add the Wednesday column for all five trains.

Step 1: Wednesday figures: $T1 = 280$, $T2 = 260$, $T3 = 420$, $T4 = 340$, $T5 = 210$.

Step 2: $280 + 260 = 540$.

Step 3: $540 + 420 = 960$.

Step 4: $960 + 340 = 1300$.

Step 5: $1300 + 210 = 1510$.

Why other options are wrong:

- Option A (1490): an incorrect sum.
- Option C (1530): an incorrect sum.
- Option D (1470): drops part of one train's figure.

Final Answer: 1510 passengers $\Rightarrow$ B

Answer: (B) [Go Back to Q25](#)



Q26.

Solution

Concept — Table Reading (Row Totals): Add each train's three-day figures and compare the totals.

Step 1: T1: $300 + 320 + 280 = 900$.

Step 2: T2: $250 + 270 + 260 = 780$.

Step 3: T3: $400 + 380 + 420 = 1200$.

Step 4: T4: $350 + 330 + 340 = 1020$.

Step 5: T5: $200 + 220 + 210 = 630$.

Step 6: The largest total is 1200, for train T3.

Why other options are wrong:

- Option B (T4): total is 1020, less than T3.
- Option C (T1): total is 900, less than T3.
- Option D (T5): total is 630, the smallest.

Final Answer: Train T3 $\Rightarrow$ A

Answer: (A) [Go Back to Q26](#)

Q27.

Solution

Concept — Percentage of a Total: $\text{Percentage} = \frac{\text{part}}{\text{total}} \times 100$.

Step 1: Tuesday figures: T1 = 320, T2 = 270, T3 = 380, T4 = 330, T5 = 220.

Step 2: Tuesday total = $320 + 270 + 380 + 330 + 220 = 1520$.

Step 3: T3 on Tuesday = 380.

Step 4: Percentage = $\frac{380}{1520} \times 100$.

Step 5: $\frac{380}{1520} = \frac{1}{4} = 0.25$.

Step 6: $0.25 \times 100 = 25\%$.

Why other options are wrong:

- Option A (20%): uses a wrong total.



- Option B (22.5%): an incorrect fraction.
- Option D (30%): overstates T3's share.

Final Answer: 25% $\Rightarrow$ C

Answer: (C) [Go Back to Q27](#)

Q28.

Solution

Concept — Ratio from a Table: Form the ratio and reduce it to lowest terms.

Step 1: T1 on Monday = 300; T5 on Monday = 200.

Step 2: Ratio = 300 : 200.

Step 3: Divide both by 100: 300 : 200 = 3 : 2.

Step 4: 3 and 2 share no common factor, so the ratio is final.

Why other options are wrong:

- Option A (2 : 3): reverses the two trains.
- Option C (5 : 4): does not reduce from 300 : 200.
- Option D (4 : 5): uses the wrong values and order.

Final Answer: 3 : 2 $\Rightarrow$ B

Answer: (B) [Go Back to Q28](#)

Q29.

Solution

Concept — Bar Chart (Total): Add the four bar heights.

Step 1: Sales (in hundreds): K = 60, L = 90, M = 75, N = 45.

Step 2: 60 + 90 = 150.

Step 3: 150 + 75 = 225.

Step 4: 225 + 45 = 270.

Why other options are wrong:

- Option B (250): drops part of one bar.



- Option C (260): an incorrect sum.
- Option D (280): overcounts the bars.

Final Answer: 270 (hundred cars) $\Rightarrow$ A

Answer: (A) [Go Back to Q29](#)

Q30.

Solution

Concept — Bar Chart (Range): Subtract the smallest bar from the largest bar.

Step 1: Highest sales = 90 (dealer L).

Step 2: Lowest sales = 45 (dealer N).

Step 3: Difference = $90 - 45$.

Step 4: Difference = 45.

Why other options are wrong:

- Option A (30): from picking the wrong two dealers.
- Option B (20): from adjacent dealers, not the extremes.
- Option C (15): from a subtraction slip.

Final Answer: 45 (hundred cars) $\Rightarrow$ D

Answer: (D) [Go Back to Q30](#)

Q31.

Solution

Concept — Percentage Comparison: “How much percent more” = $\frac{\text{difference}}{\text{base value}} \times 100$, taking the base as the value compared against (dealer K here).

Step 1: L’s sales = 90, K’s sales = 60.

Step 2: Difference = $90 - 60 = 30$.

Step 3: Percentage more = $\frac{30}{60} \times 100$.

Step 4: $\frac{30}{60} = 0.5$.

Step 5: $0.5 \times 100 = 50\%$.



Why other options are wrong:

- Option A (20%): an incorrect fraction.
- Option B (40%): uses 75 as the base, which is wrong.
- Option C (30%): confuses the raw difference with the percentage.

Final Answer: 50% $\Rightarrow$ D

Answer: (D) [Go Back to Q31](#)

Q32.

Solution

Concept — Average: $\text{Average} = \frac{\text{sum of values}}{\text{number of values}}$.

Step 1: Sum of sales = $60 + 90 + 75 + 45 = 270$ (from Q29).

Step 2: Number of dealers = 4.

Step 3: $\text{Average} = \frac{270}{4}$.

Step 4: Average = 67.5.

Why other options are wrong:

- Option B (65): uses a wrong total.
- Option C (70): uses a wrong total.
- Option D (60): uses a wrong total.

Final Answer: 67.5 (hundred cars) $\Rightarrow$ A

Answer: (A) [Go Back to Q32](#)

Q33.

Solution

Concept — Data Sufficiency: Test each statement alone for a unique value.

Step 1: Statement I: y is an even number less than 10, so y could be 2, 4, 6 or 8. Not unique, so I alone is not sufficient.

Step 2: Statement II: $3y = 21$ gives $y = 7$, a single unique value. So II alone is sufficient.

Step 3: Since II alone works and I alone does not, the answer is option B.



Why other options are wrong:

- Option A: I alone leaves several possibilities, so this is false.
- Option C: II already suffices alone, so we do not need both.
- Option D: I alone does not suffice, so “each alone” is false.

Final Answer: Statement II alone is sufficient $\Rightarrow$ B

Answer: (B) [Go Back to Q33](#)

Q34.

Solution

Concept — Data Sufficiency: The area of a rectangle needs both length and breadth; the perimeter alone fixes only their sum.

Step 1: Statement I: length = 8 cm and breadth = 5 cm, so area = $8 \times 5 = 40 \text{ cm}^2$. I alone is sufficient.

Step 2: Statement II: perimeter = 26 cm gives length + breadth = 13, but many pairs (for example 8 and 5, or 9 and 4) give different areas. So II alone is not sufficient.

Step 3: Since I alone works and II alone does not, the answer is option A.

Why other options are wrong:

- Option B: II alone leaves the area undetermined, so this is false.
- Option C: I already suffices alone, so both are not needed.
- Option D: II alone does not suffice, so “each alone” is false.

Final Answer: Statement I alone is sufficient $\Rightarrow$ A

Answer: (A) [Go Back to Q34](#)

Q35.

Solution

Concept — Data Sufficiency: Two unknowns generally need two independent equations to be solved uniquely.

Step 1: Statement I: $x + y = 10$ has infinitely many solution pairs, so I alone is not sufficient.

Step 2: Statement II: $x - y = 4$ also has infinitely many solution pairs, so II alone



is not sufficient.

Step 3: Combine both: adding the equations gives $2x = 14$, so $x = 7$, and then $y = 10 - 7 = 3$. This is unique.

Step 4: Since both together give a unique answer but neither alone does, the answer is option C.

Why other options are wrong:

- Option A: I alone leaves the pair undetermined.
- Option B: II alone leaves the pair undetermined.
- Option D: neither statement alone is sufficient.

Final Answer: Both statements together are sufficient $\Rightarrow$ C

Answer: (C) [Go Back to Q35](#)

Q36.

Solution

Concept — Data Sufficiency: A number is divisible by 6 exactly when it is divisible by both 2 and 3.

Step 1: Statement I: n is divisible by 3, but it need not be even. For example, $n = 3$ is divisible by 3 yet not by 6, while $n = 6$ is. So I alone is not sufficient.

Step 2: Statement II: n is divisible by 12. Since $12 = 6 \times 2$, any multiple of 12 is also a multiple of 6. So n is definitely divisible by 6. II alone is sufficient.

Step 3: Since II alone works and I alone does not, the answer is option B.

Why other options are wrong:

- Option A: I alone leaves the answer uncertain, so this is false.
- Option C: II already suffices alone, so both are not needed.
- Option D: I alone does not suffice, so “each alone” is false.

Final Answer: Statement II alone is sufficient $\Rightarrow$ B

Answer: (B) [Go Back to Q36](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	B	3	A	4	D	5	A
6	C	7	A	8	D	9	C	10	B
11	C	12	C	13	A	14	C	15	B
16	C	17	D	18	D	19	C	20	D
21	D	22	B	23	D	24	A	25	B
26	A	27	C	28	B	29	A	30	D
31	D	32	A	33	B	34	A	35	C
36	B								

