

NMAT Quantitative Skills

Sample Paper – 8

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.** When a certain number is increased by 25%, the result is 350. Find the original number.
- (A) 260
(B) 280
(C) 300
(D) 320
- Q2.** A trader buys a cycle for Rs. 2400 and sells it at a loss of 12%. Find the selling price of the cycle.
- (A) Rs. 2100
(B) Rs. 2112



(C) Rs. 2088

(D) Rs. 2160

Q3. An amount of Rs. 4900 is divided among X, Y and Z in the ratio 2 : 3 : 5. Find Z's share.

(A) Rs. 980

(B) Rs. 1470

(C) Rs. 1960

(D) Rs. 2450

Q4. The average of 8 numbers is 21. If one of the numbers, which is 49, is removed, what is the average of the remaining 7 numbers?

(A) 17

(B) 18

(C) 19

(D) 20

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) 60

(C) 75

(D) 80

Q6. P can complete a piece of work in 12 days and Q can complete the same work in 6 days. Working together, in how many days will they finish the work?

(A) 9

(B) 18

(C) 8



(D) 4

Q7. Find the simple interest on Rs. 7500 at the rate of 6% per annum for 4 years.

(A) Rs. 1500

(B) Rs. 1800

(C) Rs. 1650

(D) Rs. 2000

Q8. Find the compound interest on Rs. 12000 at 5% per annum, compounded annually, for 2 years.

(A) Rs. 1200

(B) Rs. 1250

(C) Rs. 1230

(D) Rs. 1260

Q9. In what ratio must sugar costing Rs. 45 per kg be mixed with sugar costing Rs. 60 per kg so that the mixture is worth Rs. 50 per kg?

(A) 2 : 1

(B) 1 : 2

(C) 3 : 2

(D) 2 : 3

Q10. M invests Rs. 5000 and N invests Rs. 3000 in a business for the same period. If the total annual profit is Rs. 4000, find M's share of the profit.

(A) Rs. 1500

(B) Rs. 2000

(C) Rs. 2500

(D) Rs. 1600



Part B: Algebra and Number System

Q11. Solve for x : $5x - 8 = 27$.

- (A) 5
- (B) 6
- (C) 7
- (D) 8

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

- (A) 4
- (B) 5
- (C) 6
- (D) 9

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

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

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

- (A) 6
- (B) 4
- (C) 12
- (D) 72

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

- (A) 25



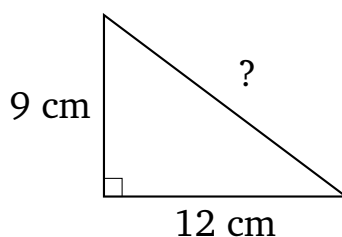
- (B) 29
- (C) 37
- (D) 33

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

- (A) 27
- (B) 29
- (C) 31
- (D) 25

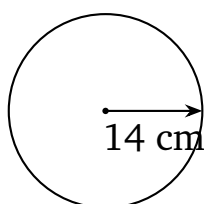
Part C: Geometry and Mensuration

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



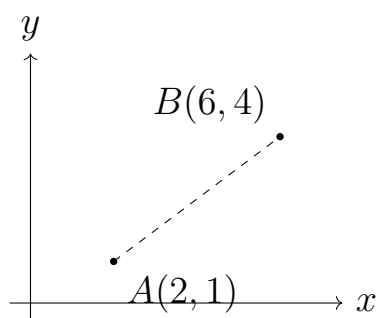
- (A) 21 cm
- (B) 18 cm
- (C) 15 cm
- (D) 13 cm

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



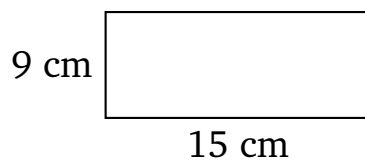
- (A) 44 cm^2
- (B) 616 cm^2
- (C) 308 cm^2
- (D) 88 cm^2

Q19. Find the distance between the points $A(2, 1)$ and $B(6, 4)$ shown on the coordinate plane.



- (A) 3
- (B) 4
- (C) 7
- (D) 5

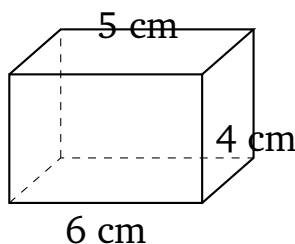
Q20. The rectangle shown has length 15 cm and breadth 9 cm. Find its perimeter.



- (A) 135 cm
- (B) 24 cm
- (C) 48 cm
- (D) 60 cm



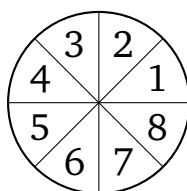
- Q21.** The cuboid shown has length 6 cm, height 4 cm and depth 5 cm. Find its volume.



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

Part D: Modern Maths

- Q22.** A fair spinner is divided into 8 equal sectors numbered 1 to 8, as shown. If the spinner is spun once, what is the probability that the arrow stops on an even number?



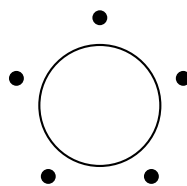
- (A) $\frac{1}{2}$
- (B) $\frac{3}{8}$
- (C) $\frac{5}{8}$
- (D) $\frac{1}{4}$

- Q23.** In how many ways can 3 books be selected from a shelf of 7 different books?



- (A) 21
- (B) 42
- (C) 35
- (D) 30

Q24. In how many ways can 5 people 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) 12
- (D) 6

Part E: Data Interpretation

Data Set I (Q25–Q28): The table below shows the number of electricity units consumed by three households X, Y and Z over six months.

Month	X	Y	Z
Jan	220	180	300
Feb	240	200	280
Mar	260	190	320
Apr	250	210	310
May	300	230	340
Jun	280	220	350

Q25. What is the total number of units consumed by Household Z over the six months?



- (A) 1600
- (B) 1750
- (C) 1830
- (D) 1900

Q26. In which month was the combined consumption of all three households the highest?

- (A) March
- (B) May
- (C) June
- (D) April

Q27. What is the average monthly consumption of Household Y over the six months?

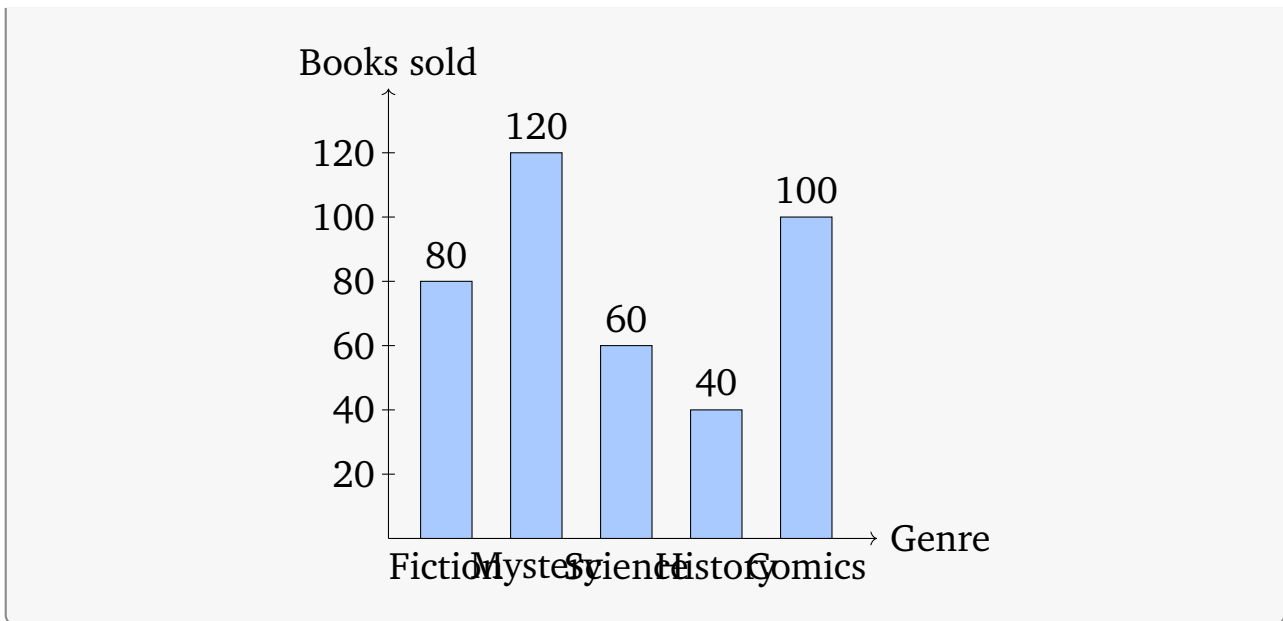
- (A) 190
- (B) 215
- (C) 200
- (D) 205

Q28. What is the ratio of Household X's consumption in January to Household Z's consumption in January?

- (A) 3 : 4
- (B) 4 : 5
- (C) 11 : 15
- (D) 22 : 15

Data Set II (Q29–Q32): The bar chart below shows the number of books sold across five genres at a bookstore in one week.





- Q29.** What is the total number of books sold across all five genres?
- (A) 400
(B) 380
(C) 420
(D) 360
- Q30.** What is the difference between the highest and the lowest genre sales?
- (A) 60
(B) 80
(C) 100
(D) 70
- Q31.** The number of Comics sold is what percentage of the total books sold?
- (A) 20%
(B) 30%
(C) 33.3%
(D) 25%
- Q32.** What is the average number of books sold per genre?



- (A) 75
- (B) 80
- (C) 85
- (D) 90

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. $3y = 21$.

II. y is a prime number strictly between 5 and 10.

- (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. 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.

Q36. What is the present age of the mother?

I. The mother is 26 years older than her daughter, and the daughter is now 8 years old.

II. The mother's present age is a multiple of 5.

- (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: Increasing a number by a percentage multiplies it by $(100 + \text{that percentage})$ over 100.

Step 1: Increasing by 25% multiplies the original by $\frac{125}{100}$.

Step 2: So $\frac{125}{100} \times \text{Original} = 350$.

Step 3: $\text{Original} = 350 \times \frac{100}{125}$.

Step 4: $\frac{100}{125} = 0.8$, so $\text{Original} = 350 \times 0.8$.

Step 5: $\text{Original} = 280$.

Why other options are wrong:

- Option A (260): increasing by 25% gives 325, not 350.
- Option C (300): increasing by 25% gives 375, not 350.
- Option D (320): increasing by 25% gives 400, not 350.

Final Answer: $280 \Rightarrow \boxed{\text{B}}$

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

Q2.

Solution

Concept — Profit and Loss: On a loss, $\text{Selling price} = \text{Cost price} - \text{Loss}$, where $\text{Loss} = \text{Loss\% of Cost price}$.

Step 1: $\text{Cost price} = \text{Rs. } 2400$, $\text{Loss} = 12\%$.

Step 2: $\text{Loss} = \frac{12}{100} \times 2400$.

Step 3: $\text{Loss} = 12 \times 24 = 288$.

Step 4: $\text{Selling price} = 2400 - 288 = 2112$.

Why other options are wrong:

- Option A (2100): uses a rounded loss, not the exact Rs. 288.



- Option C (2088): subtracts a wrong loss of Rs. 312.
- Option D (2160): uses only 10% loss (= 240).

Final Answer: Rs. 2112 $\Rightarrow$ **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 $X : Y : Z = 2 : 3 : 5$, so total parts $= 2 + 3 + 5 = 10$.

Step 2: Z's part = 5 out of 10.

Step 3: Z's share $= \frac{5}{10} \times 4900$.

Step 4: $\frac{5}{10} = \frac{1}{2}$, so Z's share $= \frac{1}{2} \times 4900$.

Step 5: Z's share = 2450.

Why other options are wrong:

- Option A (980): this is X's share (2 parts).
- Option B (1470): this is Y's share (3 parts).
- Option C (1960): uses 4 parts, which no one holds.

Final Answer: Rs. 2450 $\Rightarrow$ **D**

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

Q4.

Solution

Concept — Averages: Sum = Average $\times$ Count. Remove a value from the sum, then divide by the new count.

Step 1: Sum of 8 numbers $= 21 \times 8 = 168$.

Step 2: Remove the number 49: new sum $= 168 - 49 = 119$.

Step 3: Remaining count $= 8 - 1 = 7$.



Step 4: New average = $\frac{119}{7} = 17$.

Why other options are wrong:

- Option B (18): would need a remaining sum of 126.
- Option C (19): would need a remaining sum of 133.
- Option D (20): would need a remaining sum of 140.

Final Answer: $17 \Rightarrow \boxed{A}$

Answer: (A) [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: Speed = $\frac{360}{5}$.

Step 3: Speed = 72 km/h.

Why other options are wrong:

- Option B (60): would cover only $60 \times 5 = 300$ km.
- Option C (75): would cover 375 km, too much.
- Option D (80): would cover 400 km, too much.

Final Answer: 72 km/h $\Rightarrow \boxed{A}$

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 = $\frac{1}{6}$.



Step 3: Combined one-day work = $\frac{1}{12} + \frac{1}{6}$.

Step 4: Take LCM of 12 and 6, which is 12: $\frac{1}{12} + \frac{2}{12} = \frac{3}{12}$.

Step 5: $\frac{3}{12} = \frac{1}{4}$.

Step 6: Time together = $\frac{1}{1/4} = 4$ days.

Why other options are wrong:

- Option A (9): this is the average of 12 and 6, not the work rule.
- Option B (18): sums the days, which is incorrect.
- Option C (8): does not match the combined rate.

Final Answer: 4 days $\Rightarrow$ D

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

Q7.

Solution

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

Step 1: $P = 7500, R = 6, T = 4$.

Step 2: $SI = \frac{7500 \times 6 \times 4}{100}$.

Step 3: $7500 \times 6 = 45000$.

Step 4: $45000 \times 4 = 180000$.

Step 5: $SI = \frac{180000}{100} = 1800$.

Why other options are wrong:

- Option A (1500): uses 5% instead of 6%.
- Option C (1650): uses a wrong rate or time.
- Option D (2000): uses a rate above 6%.

Final Answer: Rs. 1800 $\Rightarrow$ B

Answer: (B) [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: $P = 12000, R = 5, T = 2$.

Step 2: Growth factor per year $= 1 + \frac{5}{100} = 1.05$.

Step 3: $\text{Amount} = 12000 \times 1.05 \times 1.05$.

Step 4: $12000 \times 1.05 = 12600$.

Step 5: $12600 \times 1.05 = 13230$.

Step 6: $\text{CI} = 13230 - 12000 = 1230$.

Why other options are wrong:

- Option A (1200): this is only the simple interest.
- Option B (1250): uses a wrong second-year base.
- Option D (1260): an arithmetic slip on the compounding.

Final Answer: Rs. 1230 $\Rightarrow$ C

Answer: (C) [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 = 45, dearer = 60, mean = 50.

Step 2: $\text{Dearer} - \text{Mean} = 60 - 50 = 10$.

Step 3: $\text{Mean} - \text{Cheaper} = 50 - 45 = 5$.

Step 4: Ratio (cheaper : dearer) = 10 : 5.

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

Why other options are wrong:

- Option B (1:2): reverses the two sugar types.



- Option C (3:2): comes from an incorrect subtraction.
- Option D (2:3): reverses and mis-reduces the ratio.

Final Answer: $2 : 1 \Rightarrow$ A

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

Q10.

Solution

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

Step 1: $M : N$ investments = $5000 : 3000$.

Step 2: Divide both by 1000: $5000 : 3000 = 5 : 3$.

Step 3: Total parts = $5 + 3 = 8$.

Step 4: M's part = 5 out of 8.

Step 5: M's share = $\frac{5}{8} \times 4000 = 5 \times 500 = 2500$.

Why other options are wrong:

- Option A (1500): this is N's share (3 parts).
- Option B (2000): an equal split, ignoring the ratio.
- Option D (1600): uses a wrong ratio part.

Final Answer: Rs. 2500 $\Rightarrow$ C

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

Q11.

Solution

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

Step 1: $5x - 8 = 27$.

Step 2: Add 8 to both sides: $5x = 27 + 8$.

Step 3: $5x = 35$.

Step 4: Divide both sides by 5: $x = \frac{35}{5}$.



Step 5: $x = 7$.

Why other options are wrong:

- Option A (5): gives $5(5) - 8 = 17$, not 27.
- Option B (6): gives $5(6) - 8 = 22$, not 27.
- Option D (8): gives $5(8) - 8 = 32$, not 27.

Final Answer: $x = 7 \Rightarrow$ 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 smaller root is 4.

Why other options are wrong:

- Option B (5): is a root, but it is the larger one.
- Option C (6): is not a root of the equation.
- Option D (9): is the sum of the roots, not a root.

Final Answer: Smaller root = 4 $\Rightarrow$ A

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

Final Answer: $243 \Rightarrow$ D

Answer: (D) [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: Lowest power of 2 common to both is 2^2 ; lowest power of 3 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 (4): a common factor, but not the highest.
- 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 (25): this is the 6th term.
- Option B (29): this is the 7th term.
- Option C (37): this is the 9th term.

Final Answer: $33 \Rightarrow$ D

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

Q16.

Solution

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

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

Step 2: Divide first: $6 \div 2 = 3$.

Step 3: Multiply next: $4 \times 3 = 12$.

Step 4: Rewrite: $20 - 3 + 12$.

Step 5: Add and subtract left to right: $20 - 3 = 17$, then $17 + 12 = 29$.

Why other options are wrong:

- Option A (27): from a wrong order of operations.
- Option C (31): from ignoring the subtraction.
- Option D (25): from subtracting the product instead of adding.

Final Answer: $29 \Rightarrow$ B

Answer: (B) [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: $\text{Hypotenuse} = \sqrt{225} = 15$ cm.

Why other options are wrong:

- Option A (21): comes from adding the legs $9 + 12$, which is wrong.
- Option B (18): its square 324 exceeds 225.
- Option D (13): its square 169 is less than 225.

Final Answer: 15 cm $\Rightarrow$ C

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

Q18.

Solution

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

Step 1: Radius $r = 14$ 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: $\text{Area} = 616$ cm².

Why other options are wrong:

- Option A (44): this is far too small for a radius of 14.



- Option C (308): this is half of the correct area.
- Option D (88): this is the circumference $2\pi r$, not the area.

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

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

Q19.

Solution

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

Step 1: $A(2, 1)$ and $B(6, 4)$.

Step 2: $x_2 - x_1 = 6 - 2 = 4$.

Step 3: $y_2 - y_1 = 4 - 1 = 3$.

Step 4: $\text{Distance} = \sqrt{4^2 + 3^2}$.

Step 5: $= \sqrt{16 + 9} = \sqrt{25}$.

Step 6: $\text{Distance} = 5$.

Why other options are wrong:

- Option A (3): only the vertical gap, not the diagonal.
- Option B (4): only the horizontal gap, not the diagonal.
- Option C (7): equals $4 + 3$, from adding instead of using squares.

Final Answer: $5 \Rightarrow \boxed{\text{D}}$

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

Q20.

Solution

Concept — Perimeter of a Rectangle: $\text{Perimeter} = 2 \times (\text{length} + \text{breadth})$.

Step 1: $\text{Length} = 15 \text{ cm}$, $\text{breadth} = 9 \text{ cm}$.

Step 2: $\text{Length} + \text{breadth} = 15 + 9 = 24$.

Step 3: $\text{Perimeter} = 2 \times 24$.

Step 4: $\text{Perimeter} = 48 \text{ cm}$.



Why other options are wrong:

- Option A (135): this is the area 15×9 , not the perimeter.
- Option B (24): this is only length + breadth, missing the factor of 2.
- Option D (60): an incorrect sum of the sides.

Final Answer: 48 cm $\Rightarrow$

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

Q21.

Solution

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

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

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

Step 3: $6 \times 4 = 24$.

Step 4: $24 \times 5 = 120$.

Step 5: Volume = 120 cm^3 .

Why other options are wrong:

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

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

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

Q22.

Solution

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

Step 1: Total outcomes = 8 (sectors 1 to 8).

Step 2: Even numbers between 1 and 8 are 2, 4, 6, 8.

Step 3: Count of favourable outcomes = 4.



Step 4: Probability = $\frac{4}{8}$.

Step 5: $\frac{4}{8} = \frac{1}{2}$.

Why other options are wrong:

- Option B (3/8): would count only 3 even numbers.
- Option C (5/8): would count 5 outcomes, but there are only 4 even numbers.
- Option D (1/4): would count only 2 favourable outcomes.

Final Answer: $\frac{1}{2} \Rightarrow$ A

Answer: (A) [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): equals 7C_2 , choosing 2 not 3.
- Option B (42): an incorrect product.
- Option D (30): does not match the formula.

Final Answer: $35 \Rightarrow$ C

Answer: (C) [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 (12): does not match the circular rule.
- Option D (6): this is $3!$, for 4 people, not 5.

Final Answer: $24 \Rightarrow \boxed{A}$

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

Q25.

Solution

Concept — Table Reading (Total): Add the Household Z column across all six months.

Step 1: Z values: 300, 280, 320, 310, 340, 350.

Step 2: $300 + 280 = 580$.

Step 3: $580 + 320 = 900$.

Step 4: $900 + 310 = 1210$.

Step 5: $1210 + 340 = 1550$.

Step 6: $1550 + 350 = 1900$.

Why other options are wrong:

- Option A (1600): drops part of the total.
- Option B (1750): an incorrect sum.
- Option C (1830): an incorrect sum.



Final Answer: 1900 units $\Rightarrow$ D

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

Q26.

Solution

Concept — Table Reading (Row Totals): Add the three household values for each month and compare.

Step 1: January: $220 + 180 + 300 = 700$.

Step 2: March: $260 + 190 + 320 = 770$.

Step 3: April: $250 + 210 + 310 = 770$.

Step 4: May: $300 + 230 + 340 = 870$.

Step 5: June: $280 + 220 + 350 = 850$.

Step 6: The highest combined total is 870, in May.

Why other options are wrong:

- Option A (March): total is only 770.
- Option C (June): total is 850, less than May.
- Option D (April): total is only 770.

Final Answer: May $\Rightarrow$ B

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

Q27.

Solution

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

Step 1: Y values: 180, 200, 190, 210, 230, 220.

Step 2: $180 + 200 = 380$.

Step 3: $380 + 190 = 570$; $570 + 210 = 780$.

Step 4: $780 + 230 = 1010$; $1010 + 220 = 1230$.

Step 5: Number of months = 6.



Step 6: Average = $\frac{1230}{6} = 205$.

Why other options are wrong:

- Option A (190): less than the true average.
- Option B (215): would need a total of 1290.
- Option C (200): would need a total of 1200.

Final Answer: 205 $\Rightarrow$ D

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

Q28.

Solution

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

Step 1: X's January consumption = 220; Z's January consumption = 300.

Step 2: Ratio = 220 : 300.

Step 3: Divide both by 20: 220 : 300 = 11 : 15.

Step 4: 11 and 15 share no common factor, so the ratio is final.

Why other options are wrong:

- Option A (3 : 4): does not reduce from 220 : 300.
- Option B (4 : 5): does not reduce from 220 : 300.
- Option D (22 : 15): uses a wrong pairing of values.

Final Answer: 11 : 15 $\Rightarrow$ C

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

Q29.

Solution

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

Step 1: Sales: Fiction = 80, Mystery = 120, Science = 60, History = 40, Comics = 100.

Step 2: 80 + 120 = 200.



Step 3: $200 + 60 = 260$.

Step 4: $260 + 40 = 300$.

Step 5: $300 + 100 = 400$.

Why other options are wrong:

- Option B (380): drops part of one bar.
- Option C (420): overcounts the bars.
- Option D (360): an incorrect sum.

Final Answer: 400 books $\Rightarrow$ 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 = 120 (Mystery).

Step 2: Lowest sales = 40 (History).

Step 3: Difference = $120 - 40$.

Step 4: Difference = 80.

Why other options are wrong:

- Option A (60): from picking the wrong two genres.
- Option C (100): from using Comics as the top bar.
- Option D (70): from a subtraction slip.

Final Answer: 80 $\Rightarrow$ B

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

Q31.

Solution

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

Step 1: Comics sold = 100; total sold = 400 (from Q29).



Step 2: Fraction = $\frac{100}{400}$.

Step 3: $\frac{100}{400} = 0.25$.

Step 4: $0.25 \times 100 = 25\%$.

Why other options are wrong:

- Option A (20%): uses a wrong total of 500.
- Option B (30%): does not match the fraction.
- Option C (33.3%): would need Comics to be one-third of the total.

Final Answer: 25% $\Rightarrow$ D

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

Q32.

Solution

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

Step 1: Total books sold = 400 (from Q29).

Step 2: Number of genres = 5.

Step 3: Average = $\frac{400}{5}$.

Step 4: Average = 80.

Why other options are wrong:

- Option A (75): uses a wrong total.
- Option C (85): uses a wrong total.
- Option D (90): uses a wrong total.

Final Answer: 80 books $\Rightarrow$ B

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



Q33.

Solution

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

Step 1: Statement I: $3y = 21$ gives $y = 7$, a single unique value. So I alone is sufficient.

Step 2: Statement II: the only prime strictly between 5 and 10 is 7, so $y = 7$, a unique value. So II alone is also sufficient.

Step 3: Since each statement alone pins down $y = 7$, the answer is option D.

Why other options are wrong:

- Option A: II also suffices alone, so “only I” is false.
- Option B: I also suffices alone, so “only II” is false.
- Option C: we do not need both together.

Final Answer: Each statement alone is sufficient $\Rightarrow$ D

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

Q34.

Solution

Concept — Data Sufficiency: The area of a rectangle needs both length and breadth.

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

Step 2: Statement II: perimeter = 26 gives length + breadth = 13, but many pairs (for example $8 + 5$ or $9 + 4$) fit and give different areas. 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 we do not need both.
- 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: Check whether each statement guarantees divisibility by 6.

Step 1: Statement I: n is divisible by 3. For example $n = 9$ is not divisible by 6, while $n = 12$ is. So parity of the answer is not fixed. I alone is not sufficient.

Step 2: Statement II: n is divisible by 12, so $n = 12, 24, 36, \dots$, and every 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 Q35](#)

Q36.

Solution

Concept — Data Sufficiency: Test each statement for a unique value of the mother’s age.

Step 1: Statement I: mother is 26 years older than the daughter, and the daughter is 8, so mother $= 8 + 26 = 34$ years. Unique, so I alone is sufficient.

Step 2: Statement II: the mother’s age is a multiple of 5, so it could be 30, 35, 40, $\dots$. Not unique, 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 is not sufficient, 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 Q36](#)



Answer Key

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

