

NMAT Quantitative Skills

Sample Paper – 7

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 town, 45% of the residents are men and the rest are women. If the town has 3300 women, how many residents does the town have in all?
- (A) 5500
(B) 4500
(C) 6000
(D) 7300
- Q2.** A trader buys a table fan for Rs. 1200 and sells it at a loss of 12%. Find the selling price of the fan.
- (A) Rs. 1344
(B) Rs. 1080



(C) Rs. 1140

(D) Rs. 1056

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

(A) Rs. 1800

(B) Rs. 2400

(C) Rs. 2100

(D) Rs. 1400

Q4. The average of 6 numbers is 18. When a seventh number is included, the average of all 7 numbers becomes 20. Find the seventh number.

(A) 20

(B) 26

(C) 38

(D) 32

Q5. A train travels a distance of 360 km in 4.5 hours. Find the average speed of the train in km/h.

(A) 75

(B) 80

(C) 90

(D) 72

Q6. P can complete a piece of work in 12 days and Q can complete the same work in 18 days. Working together, in how many days will they finish the work?

(A) 7.2

(B) 15

(C) 6



(D) 30

Q7. Find the simple interest on Rs. 6400 at the rate of 9% per annum for 2.5 years.

(A) Rs. 1600

(B) Rs. 1152

(C) Rs. 1440

(D) Rs. 1728

Q8. Find the compound interest on Rs. 12500 at 8% per annum, compounded annually, for 2 years.

(A) Rs. 2000

(B) Rs. 2160

(C) Rs. 1000

(D) Rs. 2080

Q9. In what ratio must milk costing Rs. 50 per litre be mixed with milk costing Rs. 65 per litre so that the mixture is worth Rs. 56 per litre?

(A) 3 : 2

(B) 2 : 3

(C) 5 : 4

(D) 1 : 1

Q10. A invests Rs. 9000 and B invests Rs. 6000 in a business for the same period. If the total annual profit is Rs. 3000, find A's share of the profit.

(A) Rs. 1800

(B) Rs. 1200

(C) Rs. 1500

(D) Rs. 2000



Part B: Algebra and Number System

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

- (A) 5
- (B) 7
- (C) 9
- (D) 6

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) 10

Q13. Simplify: $3^5 \div 3^2$.

- (A) 9
- (B) 81
- (C) 27
- (D) 243

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

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

Q15. Find the 12th term of the arithmetic progression 5, 9, 13, ...

- (A) 41



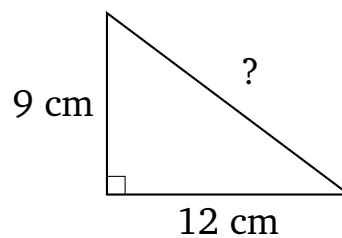
- (B) 45
- (C) 53
- (D) 49

Q16. Simplify using the order of operations: $20 - 4 \times 3 + 16 \div 4$.

- (A) 8
- (B) 12
- (C) 16
- (D) 24

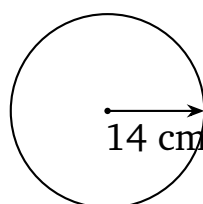
Part C: Geometry and Mensuration

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



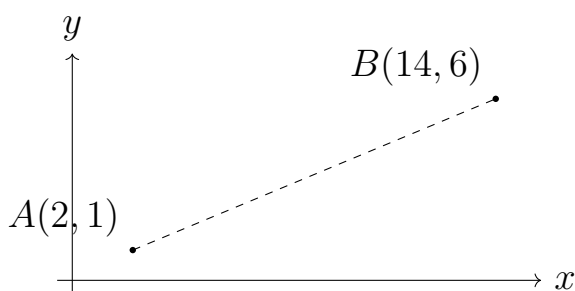
- (A) 15 cm
- (B) 21 cm
- (C) 18 cm
- (D) 13 cm

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



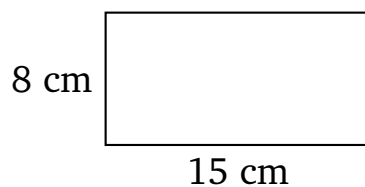
- (A) 88 cm^2
- (B) 154 cm^2
- (C) 196 cm^2
- (D) 616 cm^2

Q19. Find the distance between the points $A(2, 1)$ and $B(14, 6)$ shown on the coordinate plane.



- (A) 12
- (B) 5
- (C) 13
- (D) 17

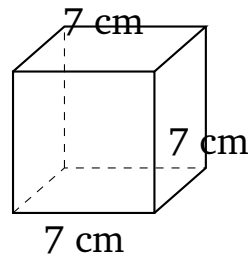
Q20. The rectangle shown has length 15 cm and breadth 8 cm. Find its perimeter.



- (A) 120 cm
- (B) 46 cm
- (C) 23 cm
- (D) 60 cm



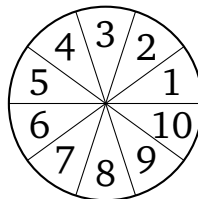
Q21. The cube shown has an edge of 7 cm. Find its volume.



- (A) 294 cm^3
- (B) 49 cm^3
- (C) 21 cm^3
- (D) 343 cm^3

Part D: Modern Maths

Q22. A fair spinner is divided into 10 equal sectors numbered 1 to 10, as shown. If the spinner is spun once, what is the probability that the arrow stops on a perfect square?



- (A) $\frac{1}{5}$
- (B) $\frac{3}{10}$
- (C) $\frac{2}{5}$
- (D) $\frac{1}{2}$

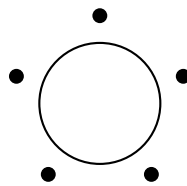
Q23. In how many ways can a committee of 3 members be chosen from a group of 7 people?

- (A) 21



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

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) 120
- (B) 60
- (C) 24
- (D) 12

Part E: Data Interpretation

Data Set I (Q25–Q28): The table below shows the number of employees in five departments of a company, split into male and female.

Department	Male	Female
HR	45	55
Finance	80	40
Sales	85	65
IT	70	30
Operations	70	60

- Q25.** What is the total number of employees across all five departments together?
- (A) 600
 - (B) 560



(C) 620

(D) 580

Q26. Which department has the largest number of female employees?

(A) HR

(B) Operations

(C) IT

(D) Sales

Q27. What is the ratio of male to female employees in the Finance department?

(A) 1 : 2

(B) 3 : 2

(C) 4 : 3

(D) 2 : 1

Q28. What is the total number of male employees across all five departments?

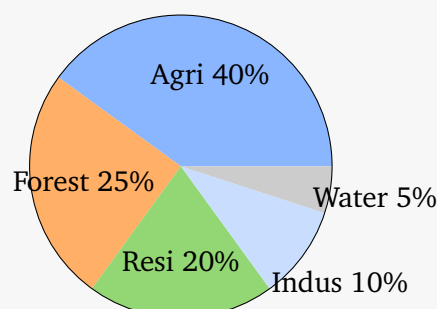
(A) 250

(B) 350

(C) 400

(D) 300

Data Set II (Q29–Q32): The pie chart below shows how the total land of a district (800 sq km) is used across five categories.



- Q29.** What is the area of the district under Agriculture (in sq km)?
- (A) 320
(B) 200
(C) 160
(D) 400
- Q30.** What is the central angle of the Forest category in the pie chart?
- (A) 72°
(B) 90°
(C) 144°
(D) 36°
- Q31.** The area under Residential use is how much more than the area under Industrial use (in sq km)?
- (A) 40
(B) 120
(C) 80
(D) 160
- Q32.** Agriculture and Forest together cover what percentage of the district?
- (A) 55%
(B) 60%
(C) 65%
(D) 70%

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 12 cm and the breadth is 5 cm.
- II. The length is 12 cm and the perimeter is 34 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 12.
- II. n is an even number.

- (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 Rahul?

- I. Five years ago, Rahul was 18 years old.
- II. Rahul'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: If men and women together make the whole, their percentages add up to 100%, and both are taken on the same total.

Step 1: Men = 45%, so women = $100\% - 45\% = 55\%$.

Step 2: The 55% who are women equal 3300 residents.

Step 3: So 55% of Total = 3300.

Step 4: $\frac{55}{100} \times \text{Total} = 3300$.

Step 5: Total = $3300 \times \frac{100}{55}$.

Step 6: Total = $60 \times 100 = 6000$.

Why other options are wrong:

- Option A (5500): would make 55% of it = 3025, not 3300.
- Option B (4500): 55% of it = 2475, not 3300.
- Option D (7300): 55% of it = 4015, not 3300.

Final Answer: 6000 residents $\Rightarrow$ C

Answer: (C) [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. 1200, Loss = 12%.

Step 2: Loss = $\frac{12}{100} \times 1200$.

Step 3: Loss = $12 \times 12 = 144$.

Step 4: Selling price = $1200 - 144 = 1056$.

Why other options are wrong:

- Option A (1344): adds the loss instead of subtracting it.



- Option B (1080): uses a 10% loss (= 120).
- Option C (1140): uses only a 5% loss (= 60).

Final Answer: Rs. 1056 $\Rightarrow$ D

Answer: (D) [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 $X : Y = 3 : 4$, so total parts = $3 + 4 = 7$.

Step 2: X's part = 3 out of 7.

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

Step 4: $\frac{4200}{7} = 600$.

Step 5: X's share = $3 \times 600 = 1800$.

Why other options are wrong:

- Option B (2400): this is Y's share, not X's.
- Option C (2100): this is an equal half-split, ignoring the ratio.
- Option D (1400): uses a wrong ratio part.

Final Answer: Rs. 1800 $\Rightarrow$ A

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

Q4.

Solution

Concept — Averages: Sum = Average $\times$ Count. The new number equals the new total minus the old total.

Step 1: Sum of the first 6 numbers = $18 \times 6 = 108$.

Step 2: Sum of all 7 numbers = $20 \times 7 = 140$.

Step 3: Seventh number = $140 - 108$.

Step 4: Seventh number = 32.



Why other options are wrong:

- Option A (20): this is just the new average, not the added number.
- Option B (26): uses a wrong total.
- Option C (38): uses a wrong total.

Final Answer: $32 \Rightarrow$ 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 = 4.5 hours.

Step 2: $\text{Speed} = \frac{360}{4.5}$.

Step 3: Multiply top and bottom by 2: $\frac{720}{9}$.

Step 4: Speed = 80 km/h.

Why other options are wrong:

- Option A (75): would cover only $75 \times 4.5 = 337.5$ km.
- Option C (90): would cover $90 \times 4.5 = 405$ km.
- Option D (72): would cover $72 \times 4.5 = 324$ km.

Final Answer: 80 km/h $\Rightarrow$ B

Answer: (B) [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 = $\frac{1}{18}$.



Step 3: Combined one-day work = $\frac{1}{12} + \frac{1}{18}$.

Step 4: Take LCM of 12 and 18, which is 36: $\frac{3}{36} + \frac{2}{36} = \frac{5}{36}$.

Step 5: Time together = $\frac{1}{5/36} = \frac{36}{5}$.

Step 6: $\frac{36}{5} = 7.2$ days.

Why other options are wrong:

- Option B (15): this is the average of 12 and 18, not the work rule.
- Option C (6): less than either single time, and does not match.
- Option D (30): sums the days, which is incorrect.

Final Answer: 7.2 days $\Rightarrow$ A

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

Q7.

Solution

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

Step 1: $P = 6400, R = 9, T = 2.5$.

Step 2: $SI = \frac{6400 \times 9 \times 2.5}{100}$.

Step 3: $6400 \times 9 = 57600$.

Step 4: $57600 \times 2.5 = 144000$.

Step 5: $SI = \frac{144000}{100} = 1440$.

Why other options are wrong:

- Option A (1600): uses a wrong rate or time.
- Option B (1152): uses 2 years instead of 2.5.
- Option D (1728): uses 3 years instead of 2.5.

Final Answer: Rs. 1440 $\Rightarrow$ C

Answer: (C) [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: $P = 12500, R = 8, T = 2$.

Step 2: Growth factor per year $= 1 + \frac{8}{100} = 1.08$.

Step 3: $\text{Amount} = 12500 \times 1.08 \times 1.08$.

Step 4: $12500 \times 1.08 = 13500$.

Step 5: $13500 \times 1.08 = 14580$.

Step 6: $\text{CI} = 14580 - 12500 = 2080$.

Why other options are wrong:

- Option A (2000): this is only the simple interest.
- Option B (2160): doubles the first-year interest, ignoring compounding.
- Option C (1000): uses a wrong rate.

Final Answer: Rs. 2080 $\Rightarrow$ 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 = 65, mean = 56.

Step 2: $\text{Dearer} - \text{Mean} = 65 - 56 = 9$.

Step 3: $\text{Mean} - \text{Cheaper} = 56 - 50 = 6$.

Step 4: Ratio (cheaper : dearer) = 9 : 6.

Step 5: Divide both by 3: 9 : 6 = 3 : 2.

Why other options are wrong:

- Option B (2:3): reverses the two milk types.



- Option C (5:4): comes from an incorrect subtraction.
- Option D (1:1): would give a mean of Rs. 57.5, not Rs. 56.

Final Answer: $3 : 2 \Rightarrow$ 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: A : B investments = 9000 : 6000.

Step 2: Divide both by 3000: $9000 : 6000 = 3 : 2$.

Step 3: Total parts = $3 + 2 = 5$.

Step 4: A's part = 3 out of 5.

Step 5: A's share = $\frac{3}{5} \times 3000 = 3 \times 600 = 1800$.

Why other options are wrong:

- Option B (1200): this is B's share.
- Option C (1500): an equal split, ignoring the ratio.
- Option D (2000): uses a wrong ratio part.

Final Answer: Rs. 1800 $\Rightarrow$ A

Answer: (A) [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 C (9): gives $5(9) - 8 = 37$, not 27.
- Option D (6): gives $5(6) - 8 = 22$, not 27.

Final Answer: $x = 7 \Rightarrow$ B

Answer: (B) [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 (10): 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 dividing powers with the same base, subtract the exponents: $a^m \div a^n = a^{m-n}$.

Step 1: $3^5 \div 3^2 = 3^{5-2}$.

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



Step 3: $3^3 = 27$.

Why other options are wrong:

- Option A (9): equals 3^2 , from subtracting wrongly.
- Option B (81): equals 3^4 .
- Option D (243): equals 3^5 , from not dividing at all.

Final Answer: $27 \Rightarrow$ C

Answer: (C) [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 primes: 2 (lowest power 2^2) and 3 (lowest power 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 C (72): this is the LCM, not the HCF.
- Option D (4): a common factor, but not the highest.

Final Answer: $12 \Rightarrow$ B

Answer: (B) [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 12th term, $n = 12$: $a_{12} = 5 + (12 - 1) \times 4$.

Step 4: $a_{12} = 5 + 11 \times 4$.

Step 5: $a_{12} = 5 + 44 = 49$.

Why other options are wrong:

- Option A (41): this is the 10th term.
- Option B (45): this is the 11th term.
- Option C (53): this is the 13th term.

Final Answer: $49 \Rightarrow$ D

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

Q16.

Solution

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

Step 1: Expression: $20 - 4 \times 3 + 16 \div 4$.

Step 2: Multiply first: $4 \times 3 = 12$.

Step 3: Divide next: $16 \div 4 = 4$.

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

Step 5: Work left to right: $20 - 12 = 8$, then $8 + 4 = 12$.

Why other options are wrong:

- Option A (8): stops before adding the 4.
- Option C (16): from a wrong order of operations.
- Option D (24): from ignoring the multiplication.

Final Answer: $12 \Rightarrow$ 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 B (21): comes from adding the legs $9 + 12$, which is wrong.
- Option C (18): its square 324 exceeds 225.
- Option D (13): its square is only 169.

Final Answer: 15 cm $\Rightarrow$ A

Answer: (A) [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 (88): this is the circumference $2\pi r$, not the area.



- Option B (154): uses a radius of 7 cm, not 14 cm.
- Option C (196): this is r^2 , missing the factor π .

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: $A(2, 1)$ and $B(14, 6)$.

Step 2: $x_2 - x_1 = 14 - 2 = 12$.

Step 3: $y_2 - y_1 = 6 - 1 = 5$.

Step 4: $\text{Distance} = \sqrt{12^2 + 5^2}$.

Step 5: $= \sqrt{144 + 25} = \sqrt{169}$.

Step 6: $\text{Distance} = 13$.

Why other options are wrong:

- Option A (12): only the horizontal gap, not the diagonal.
- Option B (5): only the vertical gap, not the diagonal.
- Option D (17): equals $12 + 5$, from adding instead of using squares.

Final Answer: $13 \Rightarrow \boxed{\text{C}}$

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

Q20.

Solution

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

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

Step 2: $\text{Length} + \text{breadth} = 15 + 8 = 23$.

Step 3: $\text{Perimeter} = 2 \times 23$.

Step 4: $\text{Perimeter} = 46 \text{ cm}$.



Why other options are wrong:

- Option A (120): this is the area 15×8 , not the perimeter.
- Option C (23): this is only length + breadth, missing the factor 2.
- Option D (60): an incorrect product.

Final Answer: 46 cm $\Rightarrow$ B

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

Q21.

Solution

Concept — Volume of a Cube: $\text{Volume} = (\text{edge})^3$.

Step 1: Edge = 7 cm.

Step 2: Volume = $7 \times 7 \times 7$.

Step 3: $7 \times 7 = 49$.

Step 4: $49 \times 7 = 343$.

Step 5: Volume = 343 cm^3 .

Why other options are wrong:

- Option A (294): equals half the surface area 6×49 , not the volume.
- Option B (49): equals the area of one face, 7^2 .
- Option C (21): equals 3×7 , from adding the edges.

Final Answer: $343 \text{ cm}^3 \Rightarrow$ D

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

Q22.

Solution

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

Step 1: Total outcomes = 10 (sectors 1 to 10).

Step 2: Perfect squares between 1 and 10 are 1, 4, 9.

Step 3: Count of favourable outcomes = 3.



Step 4: Probability = $\frac{3}{10}$.

Why other options are wrong:

- Option A (1/5): would count only 2 perfect squares.
- Option C (2/5): would count 4 perfect squares.
- Option D (1/2): would count 5 favourable outcomes.

Final Answer: $\frac{3}{10} \Rightarrow$ 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): equals 7C_2 , choosing 2 not 3.
- Option B (210): this is 7P_3 (order counted), not a committee.
- Option D (42): 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 A (120): this is $5!$, the count for a straight row, not a circle.
- Option B (60): does not match the circular rule.
- Option D (12): too small for 5 people.

Final Answer: $24 \Rightarrow$ C

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

Q25.

Solution

Concept — Table Reading (Total): Add every male and female entry across all departments.

Step 1: Department totals: HR $= 45 + 55 = 100$, Finance $= 80 + 40 = 120$, Sales $= 85 + 65 = 150$, IT $= 70 + 30 = 100$, Operations $= 70 + 60 = 130$.

Step 2: $100 + 120 = 220$.

Step 3: $220 + 150 = 370$.

Step 4: $370 + 100 = 470$.

Step 5: $470 + 130 = 600$.

Why other options are wrong:

- Option B (560): drops one department's count.
- Option C (620): an incorrect sum.
- Option D (580): an incorrect sum.

Final Answer: 600 employees $\Rightarrow$ A

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



Q26.

Solution

Concept — Table Reading (Column Comparison): Compare the female entries across departments and pick the largest.

Step 1: Female counts: HR = 55, Finance = 40, Sales = 65, IT = 30, Operations = 60.

Step 2: Order them: $65 > 60 > 55 > 40 > 30$.

Step 3: The largest female count is 65, in the Sales department.

Why other options are wrong:

- Option A (HR): has 55 females, not the most.
- Option B (Operations): has 60 females, still less than 65.
- Option C (IT): has only 30 females, the fewest.

Final Answer: Sales $\Rightarrow$ D

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

Q27.

Solution

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

Step 1: Finance department: males = 80, females = 40.

Step 2: Ratio = 80 : 40.

Step 3: Divide both by 40: $80 : 40 = 2 : 1$.

Step 4: The ratio of male to female is 2 : 1.

Why other options are wrong:

- Option A (1 : 2): reverses male and female.
- Option B (3 : 2): does not reduce from 80 : 40.
- Option C (4 : 3): does not match the given values.

Final Answer: 2 : 1 $\Rightarrow$ D

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



Q28.

Solution

Concept — Table Reading (Column Total): Add the male entries across all five departments.

Step 1: Male counts: HR = 45, Finance = 80, Sales = 85, IT = 70, Operations = 70.

Step 2: $45 + 80 = 125$.

Step 3: $125 + 85 = 210$.

Step 4: $210 + 70 = 280$.

Step 5: $280 + 70 = 350$.

Why other options are wrong:

- Option A (250): this is the total number of females, not males.
- Option C (400): an incorrect sum.
- Option D (300): an incorrect sum.

Final Answer: 350 male employees $\Rightarrow$ **B**

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

Q29.

Solution

Concept — Pie Chart (Percentage of a Total): Area of a category = its percentage $\times$ total area.

Step 1: Agriculture share = 40%; total area = 800 sq km.

Step 2: Agriculture area = $\frac{40}{100} \times 800$.

Step 3: $\frac{40}{100} = 0.4$.

Step 4: Area = $0.4 \times 800 = 320$ sq km.

Why other options are wrong:

- Option B (200): uses 25% instead of 40%.
- Option C (160): uses 20% instead of 40%.
- Option D (400): uses 50% instead of 40%.



Final Answer: 320 sq km $\Rightarrow$ A

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

Q30.

Solution

Concept — Pie Chart (Central Angle): Central angle = percentage share $\times 360^\circ$.

Step 1: Forest share = 25%.

Step 2: Central angle = $\frac{25}{100} \times 360^\circ$.

Step 3: $\frac{25}{100} = 0.25$.

Step 4: Angle = $0.25 \times 360^\circ = 90^\circ$.

Why other options are wrong:

- Option A (72°): corresponds to a 20% share.
- Option C (144°): corresponds to a 40% share.
- Option D (36°): corresponds to a 10% share.

Final Answer: $90^\circ \Rightarrow$ B

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

Q31.

Solution

Concept — Pie Chart (Difference of Areas): Convert each share to area, then subtract.

Step 1: Residential share = 20%, so area = $\frac{20}{100} \times 800 = 160$ sq km.

Step 2: Industrial share = 10%, so area = $\frac{10}{100} \times 800 = 80$ sq km.

Step 3: Difference = $160 - 80$.

Step 4: Difference = 80 sq km.

Why other options are wrong:

- Option A (40): uses a wrong percentage difference.
- Option B (120): adds the two areas instead of subtracting.



- Option D (160): this is only the Residential area.

Final Answer: 80 sq km $\Rightarrow$

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

Q32.

Solution

Concept — Pie Chart (Combined Share): Add the percentage shares of the two categories.

Step 1: Agriculture share = 40%.

Step 2: Forest share = 25%.

Step 3: Combined share = 40% + 25%.

Step 4: Combined share = 65%.

Why other options are wrong:

- Option A (55%): from a wrong Forest share.
- Option B (60%): from a wrong addition.
- Option D (70%): overstates the Forest share.

Final Answer: 65% $\Rightarrow$

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

Q33.

Solution

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

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 four possible values, so it 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: A rectangle’s area needs both length and breadth; check whether each statement provides them.

Step 1: Statement I: length = 12 cm and breadth = 5 cm, so area = $12 \times 5 = 60$ cm². I alone is sufficient.

Step 2: Statement II: length = 12 cm and perimeter = 34 cm, so $2(12 + b) = 34$, giving $b = 5$ cm and area = 60 cm². II alone is sufficient.

Step 3: Each statement alone gives the area, so 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 Q34](#)

Q35.

Solution

Concept — Data Sufficiency: Check whether each statement guarantees divisibility by 6.

Step 1: Statement I: 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. I alone is sufficient.

Step 2: Statement II: n is even, so n could be 4 (not divisible by 6) or 6 (divisible by 6). Not definite, 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 answer undecided, 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 Q35](#)

Q36.

Solution

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

Step 1: Statement I: five years ago Rahul was 18, so his present age $= 18 + 5 = 23$ years. Unique, so I alone is sufficient.

Step 2: Statement II: his age is a multiple of 5, so it could be 20, 25, 30, 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	C	2	D	3	A	4	D	5	B
6	A	7	C	8	D	9	A	10	A
11	B	12	C	13	C	14	B	15	D
16	B	17	A	18	D	19	C	20	B
21	D	22	B	23	C	24	C	25	A
26	D	27	D	28	B	29	A	30	B
31	C	32	C	33	B	34	D	35	A
36	A								

