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SCO INTERNATIONAL

MATHS OLYMPIAD

CLASS 6 QUESTION PAPER

Set H | 2025-26 | 50 Questions | Answer Key & Explanations

Designed from Class 6 mathematics pathways and aligned with SCO's platform flow for guided preparation, practice, reporting, and future-ready academic growth.

- age-fit practice for Grade 6 learners globally with reasoning-based mathematics questions
- coverage across number system, fractions, decimals, algebra, geometry, mensuration, data handling, ratios, and logical proof
- website-ready question blocks with correct answer, explanation, diagrams, and teacher-friendly review flow

Numbers Ratios	Fractions Reasoning	Algebra Case Study	Geometry Proofs	Mensuration Symmetry	Data Handling Achievers

SCO International Maths Olympiad - Class 6 Question Paper

Guidelines for Students

- Read each question carefully and choose only one correct option.
- Use rough work space for calculations; calculator use is not allowed.
- Figures are not necessarily drawn to scale unless stated.
- Explanations are provided to support learning and teacher review.
- The paper is structured into General Mathematics, Applied/Case-Based Reasoning, Reasoning/Proofs, and Achievers Section.

Name:	**Registration ID:** .....
School:	**Contact No.:** .....

Section A: General Mathematics

Q1 **What is the successor of 999,999?**

A) 999,998
B) 1,000,001
C) 1,000,000
D) 10,000,000

Correct Answer: C) 1,000,000
Explanation: The successor of a number is the next number after it. 999,999 + 1 = 1,000,000.

Q2 **Find the least common multiple (LCM) of 18 and 24.**

A) 72
B) 144
C) 12
D) 216

Correct Answer: A) 72
Explanation: $18 = 2 \times 3^2$ and $24 = 2^3 \times 3$. The LCM is $2^3 \times 3^2 = 72$.

Q3 **Evaluate: (-5) - [-2 × (3 - 7)] + 4**

A) -9
B) -3
C) 3
D) 9

Correct Answer: A) -9
Explanation: First, 3 - 7 = -4. Then -2 × (-4) = 8. So (-5) - 8 + 4 = -13 + 4 = -9.

Q4 **Compute: 3/4 + 5/6.**

A) 19/12
B) 11/12
C) 7/12
D) 17/12

Correct Answer: A) 19/12
Explanation: The LCM of 4 and 6 is 12. 3/4 = 9/12 and 5/6 = 10/12. Their sum is 19/12.

Q5 **What is 4.56 × 2.5?**

A) 11.40
B) 12.30
C) 10.12
D) 9.12

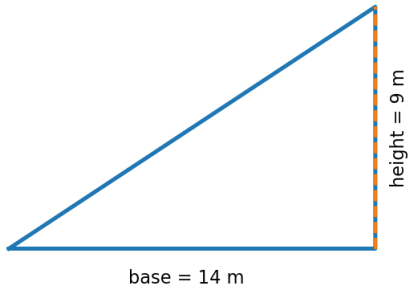
Correct Answer: A) 11.40
Explanation: 456 × 25 = 11,400. Since the factors have three total decimal places, the product is 11.400 = 11.40.

Q6 **The marks scored by 9 students are 72, 85, 90, 65, 78, 88, 92, 80, and 75. What is the median mark?**

A) 78
B) 80
C) 85
D) 88

Correct Answer: B) 80
Explanation: Arrange the marks in order: 65, 72, 75, 78, 80, 85, 88, 90, 92. The fifth value is the median, so the median is 80.

Q7 **A triangular plot has base 14 m and height 9 m. What is its area?**



A) 63 m^2
B) 126 m^2
C) 42 m^2
D) 77 m^2

Correct Answer: A) 63 m^2
Explanation: Area of a triangle = 1/2 × base × height = 1/2 × 14 × 9 = 63 m^2.

Q8 **Solve for x: 2x + 7 = 31.**

A) 10
B) 12
C) 11
D) 9

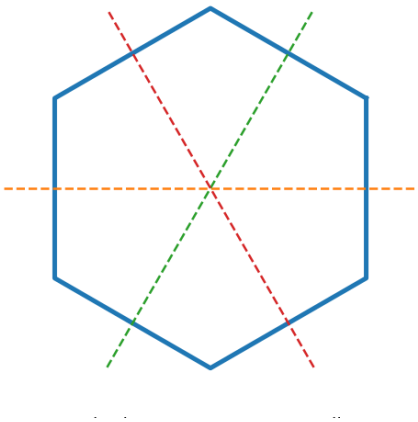
Correct Answer: B) 12
Explanation: Subtract 7 from both sides: 2x = 24. Divide by 2: x = 12.

Q9 **If 5 kg of sugar costs ₹240, how much will 8 kg cost at the same rate?**

A) ₹336
B) ₹380
C) ₹384
D) ₹400

Correct Answer: C) ₹384
Explanation: Cost per kg = 240 ÷ 5 = ₹48. Cost of 8 kg = 48 × 8 = ₹384.

Q10 **How many lines of symmetry does a regular hexagon have?**



A) 3
B) 6
C) 12
D) 9

Correct Answer: B) 6
Explanation: A regular polygon has as many lines of symmetry as the number of its sides. A regular hexagon has 6 sides, so it has 6 lines of symmetry.

Q11 **A simple convex polygon has an interior-angle sum of 1440°. How many sides does it have?**

A) 7
B) 8
C) 9
D) 10

Correct Answer: D) 10
Explanation: For an n-sided polygon, interior-angle sum = (n - 2) × 180°. So (n - 2) × 180 = 1440, n - 2 = 8, and n = 10.

Q12 **Evaluate: [-9 + (6 × 2)] - [4 - (-5)].**

A) -6
B) -2
C) 2
D) 6

Correct Answer: A) -6
Explanation: The first bracket is -9 + 12 = 3. The second bracket is 4 - (-5) = 9. Therefore 3 - 9 = -6.

Q13 **Evaluate: (-6 + 5 × 2) - (3 - (-4)).**

A) -7
B) -3
C) 3
D) 7

Correct Answer: B) -3

Explanation: First bracket: -6 + 10 = 4. Second bracket: 3 + 4 = 7. Therefore 4 - 7 = -3.

Q14 **Compute: 2/5 + 1/4 - 2/35.**

A) 11/28

B) 47/84

C) 83/140

D) 13/35

Correct Answer: C) 83/140

Explanation: Using denominator 140: 2/5 = 56/140, 1/4 = 35/140, and 2/35 = 8/140. So the value is (56 + 35 - 8)/140 = 83/140.

Q15 **Find: 12.75 ÷ 1.5 + 3.2 × 2.5.**

A) 14.5

B) 16.5

C) 18.5

D) 20.5

Correct Answer: B) 16.5

Explanation: 12.75 ÷ 1.5 = 8.5, and 3.2 × 2.5 = 8. Therefore the total is 8.5 + 8 = 16.5.

Q16 **A regular polygon has each interior angle equal to 156°. How many sides does it have?**

A) 10

B) 12

C) 15

D) 18

Correct Answer: C) 15

Explanation: For a regular polygon, each exterior angle = 180° - 156° = 24°. Number of sides = 360° ÷ 24° = 15.

Q17 **Compute: 5/6 + 7/9 - 5/18.**

A) 4/3

B) 5/9

C) 2/5

D) 3/10

Correct Answer: A) 4/3

Explanation: Convert to eighteenths: 5/6 = 15/18, 7/9 = 14/18, and 5/18 remains 5/18. Total = (15 + 14 - 5)/18 = 24/18 = 4/3.

Q18 **A 16 L solution of acid and water is in the ratio 3:5. How many litres of water must be added to make the new ratio 1:2?**

A) 1 L
B) 2 L
C) 3 L
D) 4 L

Correct Answer: B) 2 L
Explanation: Acid = 6 L and water = 10 L. To make acid:water = 1:2, water must be 12 L. Additional water = 12 - 10 = 2 L.

Q19 **The circumference of a circle is 44 cm. What is its radius? Use π = 22/7.**

A) 5 cm
B) 6 cm
C) 7 cm
D) 8 cm

Correct Answer: C) 7 cm
Explanation: Circumference = 2πr. So 44 = 2 × (22/7) × r. Therefore r = 44 × 7 ÷ 44 = 7 cm.

Q20 **Solve for x: x + 1/3 = 7/6.**

A) 5/6
B) 7/6
C) 13/8
D) 4/5

Correct Answer: A) 5/6
Explanation: x = 7/6 - 1/3 = 7/6 - 2/6 = 5/6.

Section B: Applied Mathematics and Case-Based Reasoning

Q21 **Find the value of n if the sum of the first n natural numbers is 210.**

A) 19
B) 20
C) 21
D) 22

Correct Answer: B) 20
Explanation: The sum of first n natural numbers is n(n + 1)/2. So n(n + 1)/2 = 210, giving n(n + 1) = 420. Since 20 × 21 = 420, n = 20.

Q22 **Two positive integers have HCF = 8 and LCM = 168. If one number is 24, what is the other?**

A) 42
B) 48
C) 56
D) 64

Correct Answer: C) 56

Explanation: For two positive integers, product of numbers = HCF × LCM. Thus 24 × other number = 8 × 168 = 1344. Other number = 1344 ÷ 24 = 56.

Q23 **A convex polygon has exactly twice as many diagonals as it has sides. How many sides does it have?**

A) 5

B) 6

C) 7

D) 8

Correct Answer: C) 7

Explanation: Number of diagonals = n(n - 3)/2. Given n(n - 3)/2 = 2n. Dividing by n gives (n - 3)/2 = 2, so n - 3 = 4 and n = 7.

Q24 **Two numbers A and B are in the ratio 3:4. If 21 is added to each, the new ratio becomes 4:5. What are the original values of A and B?**

A) 60 and 80

B) 63 and 84

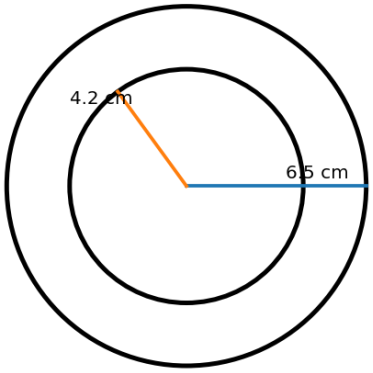
C) 54 and 72

D) 75 and 100

Correct Answer: B) 63 and 84

Explanation: Let A = 3k and B = 4k. Then (3k + 21)/(4k + 21) = 4/5. Cross-multiplying gives 15k + 105 = 16k + 84, so k = 21. Therefore A = 63 and B = 84.

Q25 **A ring is formed between two concentric circles of radii 6.5 cm and 4.2 cm. Using π = 3.14, what is the area of the ring?**



Shaded ring area = $\pi(R^2 - r^2)$

A) 72.64 cm^2

B) 77.28 cm^2

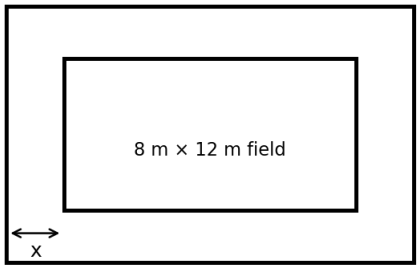
C) 84.12 cm^2

D) 100.48 cm^2

Correct Answer: B) 77.28 cm^2

Explanation: Ring area = $\pi(R^2 - r^2) = 3.14 \times (6.5^2 - 4.2^2) = 3.14 \times (42.25 - 17.64) = 3.14 \times 24.61 = 77.2754\ cm^2$, approximately 77.28 cm^2.

Q26 **A rectangular field has width 8 m and length 12 m. A uniform border is built around it so that the total area becomes exactly double the field area. What is the border width?**



Uniform border around the field

A) 1 m
B) 2 m
C) 2.5 m
D) 3 m

Correct Answer: B) 2 m

Explanation: Field area = 8 × 12 = 96 m^2, so total area = 192 m^2. If border width is x, (8 + 2x)(12 + 2x) = 192. This gives x^2 + 10x - 24 = 0, so x = 2 m.

Q27 **A cafeteria sells orange juice and apple juice. Orange cups sold are 1.5 times apple cups. Orange costs $0.80 per cup and apple costs $0.50 per cup. If total revenue is $85, how many cups were sold in total?**

A) 110
B) 115
C) 120
D) 125

Correct Answer: D) 125

Explanation: Let apple cups be A. Orange cups = 1.5A. Revenue = 0.50A + 0.80(1.5A) = 1.70A = 85, so A = 50. Total cups = A + 1.5A = 2.5A = 125.

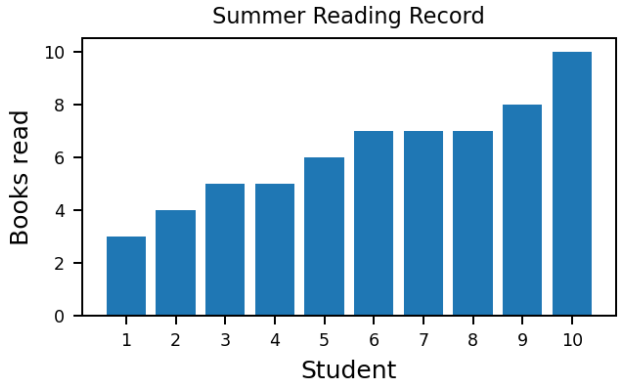
Q28 **Find the smallest positive integer that leaves a remainder of 3 when divided by 7, a remainder of 4 when divided by 9, and a remainder of 5 when divided by 11.**

A) 157
B) 253
C) 346
D) 370

Correct Answer: C) 346

Explanation: Let n = 7k + 3. Using n ≡ 4 (mod 9), k ≡ 4 (mod 9), so n = 63m + 31. Using n ≡ 5 (mod 11), 63m + 31 ≡ 5 (mod 11), giving m ≡ 5 (mod 11). The smallest value is n = 346.

Q29 **A class of 10 students recorded books read over summer: 3, 4, 5, 5, 6, 7, 7, 7, 8, 10. Find the ratio of the mean to the median in simplest fractional form.**

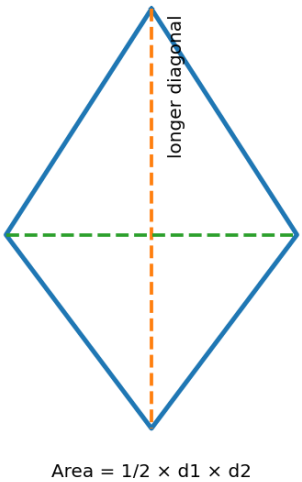


A) 62/65
B) 6/7
C) 31/32
D) 65/62

Correct Answer: A) 62/65

Explanation: Mean = total/10 = 62/10 = 6.2. Median is the average of the 5th and 6th values: (6 + 7)/2 = 6.5. Ratio = 6.2/6.5 = 62/65.

Q30 **A kite has perpendicular diagonals in the ratio 4:3. If its area is 48 cm^2, what is the length of the longer diagonal?**



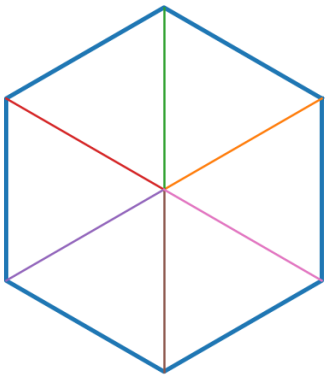
A) $6\sqrt{2}$ cm
B) $10\sqrt{2}$ cm
C) $8\sqrt{2}$ cm
D) $12\sqrt{2}$ cm

Correct Answer: C) $8\sqrt{2}$ cm

Explanation: Let the shorter diagonal be d and longer diagonal be (4/3)d. Area = 1/2 × d × (4d/3) = (2/3)d^2 = 48. Hence d^2 = 72 and d = $6\sqrt{2}$. Longer diagonal = (4/3) × $6\sqrt{2}$ = $8\sqrt{2}$ cm.

Section C: Reasoning, Proofs, and Geometry

Q31 **A regular hexagon is divided into 6 congruent equilateral triangles. If the total area of the hexagon is $54\sqrt{3}$ cm^2, what is its perimeter?**



6 congruent equilateral triangles

A) 30 cm
B) 32 cm
C) 36 cm
D) 40 cm

Correct Answer: C) 36 cm

Explanation: Area of regular hexagon = $6 \times (\sqrt{3}/4)s^2 = (3\sqrt{3}/2)s^2$. Setting this equal to $54\sqrt{3}$ gives $(3/2)s^2 = 54$, so $s^2 = 36$ and $s = 6$ cm. Perimeter = $6s = 36$ cm.

Q32 **A class had an arithmetic mean score of 16. One additional student scored 40, and the new mean became 18. What was the original number of students?**

A) 10
B) 11
C) 12
D) 13

Correct Answer: B) 11

Explanation: Let the original number of students be n. Original total = 16n. New mean gives $(16n + 40)/(n + 1) = 18$. Thus $16n + 40 = 18n + 18$, so $22 = 2n$ and $n = 11$.

Q33 **A recipe requires milk and water in the ratio 5:3. A chef has 2.5 L milk and 1.8 L water. Keeping water fixed, by what percentage must the milk be increased?**

A) 10%
B) 15%
C) 20%
D) 25%

Correct Answer: C) 20%

Explanation: For 1.8 L water, required milk = $(5/3) \times 1.8 = 3.0$ L. Increase needed = $3.0 - 2.5 = 0.5$ L. Percentage increase = $0.5/2.5 \times 100\% = 20\%$.

Q34 **Find the smallest positive three-digit integer that increases by exactly 198 when its digits are reversed.**

A) 103

B) 301

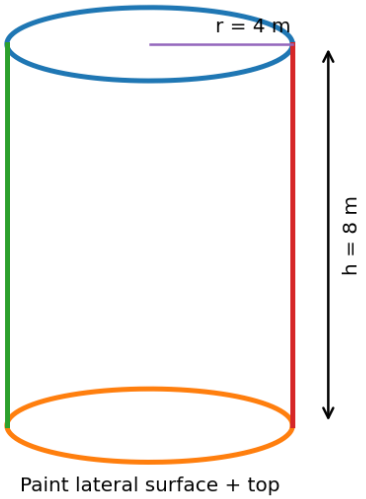
C) 312

D) 420

Correct Answer: A) 103

Explanation: Let the number be 100A + 10B + C. Reversed - original = 99(C - A) = 198, so C - A = 2. To make the smallest three-digit number, choose A = 1, B = 0, and C = 3. The number is 103.

Q35 **A cylindrical tank has radius 4 m and height equal to twice its radius. The lateral surface and top are painted, but not the bottom. What is the ratio of painted surface area to volume?**



A) 5/8

B) 8/5

C) 5/4

D) 4/5

Correct Answer: A) 5/8

Explanation: Here r = 4 m and h = 8 m. Painted area = $2\pi rh + \pi r^2 = 64\pi + 16\pi = 80\pi$. Volume = $\pi r^2 h = 128\pi$. Ratio = $80\pi/128\pi = 5/8$.

Q36 **The mediant of two fractions a/b and c/d is (a + c)/(b + d). What is the mediant of 1/3 and 2/5?**

A) 3/8, and it lies between 1/3 and 2/5

B) 3/8, but it is less than 1/3

C) 4/8, which equals 1/2

D) 2/8, which equals ¼

Correct Answer: A) 3/8, and it lies between 1/3 and 2/5

Explanation: The mediant is (1 + 2)/(3 + 5) = 3/8 = 0.375. Since 1/3 ≈ 0.333 and 2/5 = 0.4, 3/8 lies between them.

Q37 **Two whole numbers add up to 57, and their difference is greater than 4 and prime. Which pair is possible?**

A) 27 and 30
B) 28 and 29
C) 24 and 33
D) 26 and 31

Correct Answer: D) 26 and 31

Explanation: The pair must add to 57. Differences are 3, 1, 9, and 5. Only 5 is prime and greater than 4. Therefore the pair is 26 and 31.

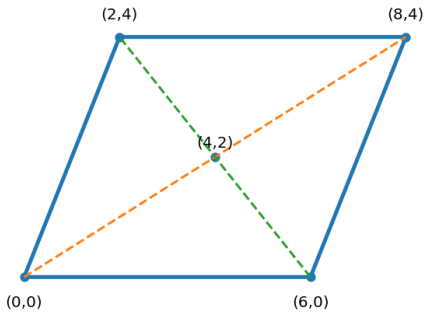
Q38 **The arithmetic mean of 7/8 and 3/4 is:**

A) 0.8125 and it is not between the two values
B) 0.8125 and it lies strictly between the two values
C) 0.8 and it equals one value
D) 0.875 and it is greater than both values

Correct Answer: B) 0.8125 and it lies strictly between the two values

Explanation: 7/8 = 0.875 and 3/4 = 0.75. The mean is (0.875 + 0.75)/2 = 0.8125, which lies strictly between 0.75 and 0.875.

Q39 **A parallelogram has vertices (0,0), (6,0), (8,4), and (2,4). What is the intersection point of its diagonals?**



A) (3,2)
B) (5,2)
C) (4,3)
D) (4,2)

Correct Answer: D) (4,2)

Explanation: Diagonals of a parallelogram bisect each other. Midpoint of (0,0) and (8,4) is ((0+8)/2, (0+4)/2) = (4,2).

Q40 **Which of the following numbers cannot be a perfect square?**

A) 64
B) 81
C) 72
D) 49

Correct Answer: C) 72

Explanation: Perfect squares can end only in 0, 1, 4, 5, 6, or 9. The number 72 ends in 2, so it cannot be a perfect square.

Q41 **Using the rule that the product of two negative numbers is positive, compute (-7) × (-5).**

A) 35

B) -35

C) -12

D) 12

Correct Answer: A) 35

Explanation: The product of two negative numbers is positive. Therefore (-7) × (-5) = 35.

Q42 **Rectangle R has dimensions 4 cm by 9 cm. Rectangle S is similar to R and its shorter side is 6 cm. What is the area of rectangle S?**

A) 27 cm^2

B) 36 cm^2

C) 54 cm^2

D) 81 cm^2

Correct Answer: D) 81 cm^2

Explanation: The scale factor is 6/4 = 1.5. Area scales by the square of the scale factor: $1.5^2 = 2.25$. Area of R = 36 cm^2, so area of S = 36 × 2.25 = 81 cm^2.

Q43 **Express the recurring decimal 0.363636... as a fraction in simplest form.**

A) 4/11

B) 3/11

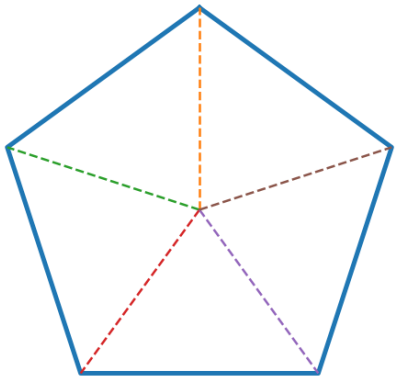
C) 4/9

D) 3/8

Correct Answer: A) 4/11

Explanation: Let x = 0.363636... Then 100x = 36.363636... Subtracting gives 99x = 36, so x = 36/99 = 4/11.

Q44 **How many lines of symmetry does a regular pentagon have?**



A) 3
B) 4
C) 5
D) 6

Correct Answer: C) 5
Explanation: A regular polygon has as many lines of symmetry as sides. A regular pentagon has 5 sides, so it has 5 lines of symmetry.

Q45 **Solve for x: 1/x + 1/12 = 1/4.**

A) 3
B) 6
C) 8
D) 12

Correct Answer: B) 6
Explanation: Subtract 1/12 from both sides: 1/x = 1/4 - 1/12 = 3/12 - 1/12 = 2/12 = 1/6. Therefore x = 6.

Section D: Achievers Section

Q46 **Which expression is correctly equal to $x^2 - 16$?**

A) $(x + 4)(x - 4)$
B) $(x + 8)(x - 8)$
C) $(x + 4)^2$
D) $(x - 16)(x + 1)$

Correct Answer: A) (x + 4)(x - 4)
Explanation: The difference of squares formula is $a^2 - b^2 = (a + b)(a - b)$. Here $x^2 - 16 = x^2 - 4^2 = (x + 4)(x - 4)$.

Q47 **Compute: 3/4 ÷ 1/2.**

A) 3/8
B) 3/2
C) 2/3
D) 1/6

Correct Answer: B) 3/2
Explanation: Dividing by a fraction means multiplying by its reciprocal: 3/4 ÷ 1/2 = 3/4 × 2/1 = 6/4 = 3/2.

Q48 **Which of the following numbers is the square of an odd number?**

A) 144
B) 196
C) 169
D) 256

Correct Answer: C) 169
Explanation: $169 = 13^2$, and 13 is odd. The other options are squares of even numbers.

Q49 **A parallelogram has adjacent side lengths 7 cm and 11 cm. What is its perimeter?**

A) 18 cm
B) 36 cm
C) 77 cm
D) 28 cm

Correct Answer: B) 36 cm
Explanation: Opposite sides of a parallelogram are equal. Perimeter = 2 × (7 + 11) = 36 cm.

Q50 **A juice container holds 8.4 litres. If each serving is 0.7 litres, how many servings can be made?**

A) 12
B) 14
C) 10
D) 11

Correct Answer: A) 12
Explanation: Number of servings = 8.4 ÷ 0.7 = 84 ÷ 7 = 12.

Complete Answer Key

Quick review table for students, teachers, and schools.

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
C	A	A	A	A	B	A	B	C	B
Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
D	A	B	C	B	C	A	B	C	A
Q21	**Q22**	**Q23**	**Q24**	**Q25**	**Q26**	**Q27**	**Q28**	**Q29**	**Q30**
B	C	C	B	B	B	D	C	A	C
Q31	**Q32**	**Q33**	**Q34**	**Q35**	**Q36**	**Q37**	**Q38**	**Q39**	**Q40**
C	B	C	A	A	A	D	B	D	C
Q41	**Q42**	**Q43**	**Q44**	**Q45**	**Q46**	**Q47**	**Q48**	**Q49**	**Q50**
A	D	A	C	B	A	B	C	B	A

Space for Rough Work