

Class 8 · Mathematics Olympiad

Total questions 50	Total marks 60	Time 60 minutes	Negative marking None
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Each question has four options, of which only one is correct. Mark your answer on the answer sheet. The Achievers Section carries higher marks per question. The answer key with full solutions is at the end of this paper.

This is original practice material written to the Level 1 pattern. It is not a past paper and is not affiliated with SOF or any official olympiad body.

Logical Reasoning

15 questions · 1 mark each · 15 marks

Q1. Which one does NOT belong with the others?

- (A) Pentagon (B) Rectangle (C) Circle (D) Square

Q2. Which letter comes next? D, F, I, M, ____

- (A) P (B) S (C) Q (D) R

Q3. Find the odd one out: 36, 54, 72, 84, 90

- (A) 84 (B) 90 (C) 36 (D) 72

Q4. Eye : See :: Ear : ____

- (A) Smell (B) Hear (C) Taste (D) Touch

Q5. Read the statements and choose the conclusion that MUST be true.

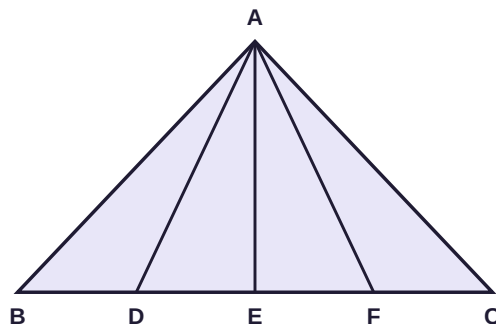
All roses are flowers. All flowers need water.

- (A) All flowers are roses. (B) Some roses do not need water.
(C) All roses need water. (D) Only roses need water.

Q6. Five friends A, B, C, D and E sit in a row of five seats. A sits at the extreme left end, D sits at the extreme right end, C sits exactly in the middle and B sits between A and C. Who sits in the fourth seat from the left?

- (A) B (B) E (C) C (D) D

Q7. How many triangles are there in the given figure?

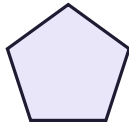


- (A) 9 (B) 12 (C) 11 (D) 10

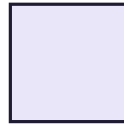
Q8. Which of these figures has exactly 5 lines of symmetry?



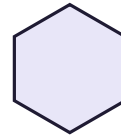
(A)



(B)



(C)



(D)

Q9. In a row of 24 children, Sana is 16th from the left end. What is Sana's position from the right end?

(A) 11th

(B) 10th

(C) 9th

(D) 8th

Q10. Find the next number in the pattern: 18, 20, 22, 24, ____

(A) 27

(B) 28

(C) 26

(D) 24

Q11. Count backward in 3s: 27, 24, 21, 18, ____

(A) 16

(B) 18

(C) 15

(D) 12

Q12. Three of the following four are alike and form a group. Which one does NOT belong?

(A) Apple

(B) Guava

(C) Carrot

(D) Mango

Q13. If JAR is written as 10 - 1 - 18 using the positions of the letters in the alphabet, how is CAT written?

(A) 3 - 1 - 20

(B) 24 - 26 - 7

(C) 20 - 1 - 3

(D) 4 - 2 - 21

Q14. A father is 4 years older than his son. The son is 17 years old now. How old will the father be after 4 years?

(A) 26 years

(B) 29 years

(C) 25 years

(D) 21 years

Q15. $6 : 36 :: 5 : \underline{\hspace{1cm}}$

(A) 36

(B) 25

(C) 10

(D) 16

Mathematical Reasoning

20 questions · 1 mark each · 20 marks

Q16. $73 - 52.06 = ?$

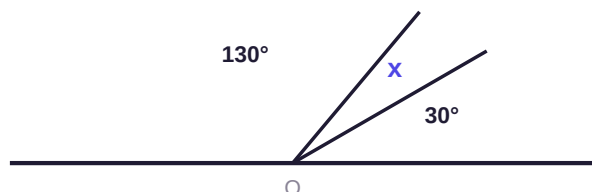
(A) 21.94

(B) 20.94

(C) 21.04

(D) 20.84

Q17. In the given figure, find the value of x .



(A) 20°

(B) 30°

(C) 50°

(D) 10°

Q18. $11,396 \div 22 = ?$

(A) 528

(B) 519

(C) 518

(D) 508

Q19. $\frac{1}{3} + \frac{6}{10} = ?$

- (A) $\frac{14}{15}$ (B) $1\frac{13}{30}$ (C) $1\frac{1}{30}$ (D) $\frac{3}{5}$

Q20. $9\text{ kg } 350\text{ g} - 3\text{ kg } 640\text{ g} = ?$

- (A) $5\text{ kg } 810\text{ g}$ (B) $6\text{ kg } 710\text{ g}$ (C) $5\text{ kg } 710\text{ g}$ (D) $5\text{ kg } 650\text{ g}$

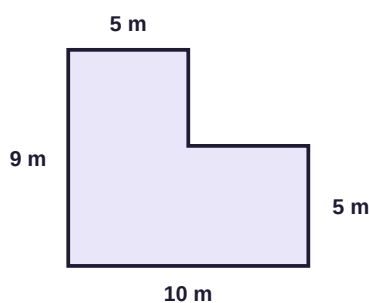
Q21. $6,70,071 - 2,43,331 = ?$

- (A) 4,36,740 (B) 4,26,740 (C) 4,26,730 (D) 4,26,840

Q22. The perimeter of a square is 100 cm. What is its area?

- (A) 625 sq cm (B) 650 sq cm (C) 100 sq cm (D) 676 sq cm

Q23. The figure shows a plot of land. What is its area?



- (A) 65 sq m (B) 90 sq m (C) 74 sq m (D) 70 sq m

Q24. At 6 a.m. the temperature was 19°C . By noon it had risen by 8°C , and by night it had fallen by 7°C . What was the temperature at night?

- (A) 27°C (B) 20°C (C) 18°C (D) 22°C

Q25. Which of these fractions is the greatest?

- (A) $\frac{3}{5}$ (B) $\frac{2}{3}$ (C) $\frac{7}{10}$ (D) $\frac{5}{8}$

Q26. Find the next number: 2, 6, 12, 20, 30, ____

- (A) 44 (B) 42 (C) 48 (D) 40

Q27. What is the smallest number that can be divided exactly by both 8 and 15?

- (A) 15 (B) 105 (C) 120 (D) 128

Q28. Round 50,098 to the nearest thousand.

- (A) 49,000 (B) 50,000 (C) 50,100 (D) 51,000

Q29. $8\text{ L } 400\text{ mL} \times 3 = ?$

- (A) $26\text{ L } 200\text{ mL}$ (B) $25\text{ L } 100\text{ mL}$ (C) $25\text{ L } 300\text{ mL}$ (D) $25\text{ L } 200\text{ mL}$

Q30. $3.8\text{ km} = \underline{\hspace{1cm}}\text{ m}$

- (A) 38,000 (B) 380 (C) 38 (D) 3,800

Q31. $465 \times 42 = ?$

- (A) 19,488 (B) 19,530 (C) 19,630 (D) 19,995

Q32. What is the place value of 2 in the number 2,54,57,403?

- (A) 20,00,00,000 (B) 20,00,000 (C) 2,00,00,000 (D) 2

Q33. $71 - 61.11 = ?$

- (A) 9.99 (B) 10.89 (C) 9.79 (D) 9.89

Q34. $5,427 \div 27 = ?$

- (A) 191 (B) 211 (C) 201 (D) 202

Q35. $1/3 + 3/4 = ?$

- (A) $1\frac{1}{12}$ (B) $1\frac{1}{3}$ (C) $1\frac{7}{12}$ (D) $3/4$

Everyday Mathematics

10 questions · 1 mark each · 10 marks

Q36. A wall is 7 m long and 4 m high. How many square tiles of side 20 cm are needed to cover it completely?

- (A) 712 (B) 350 (C) 1400 (D) 700

Q37. A shopkeeper sells 32 kg of rice at ₹ 76 per kg. How much money does he receive?

- (A) ₹ 2,332 (B) ₹ 2,432 (C) ₹ 2,464 (D) ₹ 2,532

Q38. A water tank holds 400 litres. If $3/8$ of the water is used, how much water is left?

- (A) 250 L (B) 275 L (C) 225 L (D) 150 L

Q39. An auto charges ₹ 30 for the first kilometre and ₹ 8 for every kilometre after that. What is the fare for a journey of 5 km?

- (A) ₹ 62 (B) ₹ 63 (C) ₹ 70 (D) ₹ 54

Q40. A rope 14.25 m long is cut into pieces each 75 cm long. How many complete pieces are obtained?

- (A) 19 (B) 24 (C) 17 (D) 21

Q41. A book has 112 pages. Ritu reads 14 pages every day for 4 days. How many pages are still left?

- (A) 51 (B) 61 (C) 56 (D) 57

Q42. In a class of 45 students, $3/5$ are girls. How many boys are there?

- (A) 27 (B) 18 (C) 13 (D) 23

Q43. One dozen pens cost ₹ 204. What is the cost of 5 pens?

- (A) ₹ 85 (B) ₹ 68 (C) ₹ 102 (D) ₹ 119

Q44. A train leaves at 9:20 a.m. and reaches its destination at 3:42 p.m. on the same day. How long is the journey?

- (A) 7 h 22 min (B) 6 h 32 min (C) 6 h 22 min (D) 5 h 22 min

Q45. A wall is 6 m long and 4 m high. How many square tiles of side 50 cm are needed to cover it completely?

- (A) 192 (B) 48 (C) 108 (D) 96

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. 6 taps together fill a tank in 60 minutes. How long will 5 taps of the same kind take to fill it?

- (A) 69 minutes (B) 72 minutes (C) 75 minutes (D) 60 minutes

Q47. Rahul finished the puzzle in two minutes and said it was 'a piece of cake'. What did he mean?

- (A) a rare event (B) an expensive gift
(C) a small meal (D) something very easy

Q48. A river rises in the Himalayas, flows east across northern India and forms the world's largest delta before reaching the Bay of Bengal. Which river is it?

- (A) The Narmada (B) The Godavari (C) The Krishna (D) The Ganga

Q49. Using each of the digits 9, 0, 2, 8 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 2089 (B) 2098 (C) 9820 (D) 0289

Q50. If DESK is coded as EFTL, how is WIND coded?

- (A) YKPF (B) VHMC (C) XJOE (D) EOJX

Answer Key

1	2	3	4	5	6	7	8	9	10
C	D	A	B	C	B	D	B	C	C
11	12	13	14	15	16	17	18	19	20
C	C	A	C	B	B	A	C	A	C
21	22	23	24	25	26	27	28	29	30
B	A	D	B	C	B	C	B	D	D
31	32	33	34	35	36	37	38	39	40
B	C	D	C	A	D	B	A	A	A
41	42	43	44	45	46	47	48	49	50
C	B	A	C	D	B	D	D	A	C

Solutions

Q1. (C) Circle has no straight sides.

Q2. (D) The gaps grow by one each time (+2, +3, +4, +5), so after M the next letter is R.

Q3. (A) Every other number is a multiple of 9. 84 is not.

Q4. (B) The second word relates to the first in the same way Hear relates to Ear.

Q5. (C) From "All roses are flowers. All flowers need water." it follows necessarily that all roses need water.

Q6. (B) Seat 1 = A, seat 3 = C, seat 5 = D. B must be between A and C, so B takes seat 2, and the only friend left for seat 4 is E.

Q7. (D) Every triangle has apex A and two of the 5 base points as its other corners. Choosing 2 from 5 gives 10 triangles.

Q8. (B) Counting lines of symmetry: rectangle has 2, regular pentagon has 5, square has 4, regular hexagon has 6. The answer is figure (B).

Q9. (C) Position from the right = total - position from the left + 1 = 24 - 16 + 1 = 9th.

Q10. (C) Each number is 2 more than the one before it, so the next is 24 + 2 = 26.

Q11. (C) Subtracting 3 from 18 gives 15.

Q12. (C) Mango, Guava, Apple are all fruits; Carrot is not.

- Q13. (A) C is letter 3 and A is letter 1 and T is letter 20, so $CAT = 3 - 1 - 20$.
- Q14. (C) The father is $17 + 4 = 21$ now, so after 4 years he will be $21 + 4 = 25$ years.
- Q15. (B) The second number is the first multiplied by itself: $6 \times 6 = 36$, so $5 \times 5 = 25$.
- Q16. (B) Write 73 as 73.00, then $73.00 - 52.06 = 20.94$.
- Q17. (A) The three angles lie on a straight line, so they add to 180° . $x = 180^\circ - 130^\circ - 30^\circ = 20^\circ$.
- Q18. (C) $22 \times 518 = 11,396$, so the quotient is 518.
- Q19. (A) Make the denominators the same (30): $1/3 = 10/30$ and $6/10 = 18/30$. Adding gives $28/30 = 14/15$.
- Q20. (C) $9 \text{ kg } 350 \text{ g} = 9,350 \text{ g}$ and $3 \text{ kg } 640 \text{ g} = 3,640 \text{ g}$. $9,350 - 3,640 = 5,710 \text{ g} = 5 \text{ kg } 710 \text{ g}$.
- Q21. (B) $6,70,071 - 2,43,331 = 4,26,740$.
- Q22. (A) Side = $100 / 4 = 25 \text{ cm}$, so area = $25 \times 25 = 625 \text{ sq cm}$.
- Q23. (D) The missing corner is $(10 - 5) = 5 \text{ m}$ wide and $(9 - 5) = 4 \text{ m}$ tall. Take the full rectangle $10 \text{ m} \times 9 \text{ m} = 90 \text{ sq m}$ and subtract that corner, $5 \text{ m} \times 4 \text{ m} = 20 \text{ sq m}$. $90 - 20 = 70 \text{ sq m}$.
- Q24. (B) $19 + 8 = 27$, then $27 - 7 = 20^\circ\text{C}$.
- Q25. (C) As decimals: $3/5 = 0.600$, $2/3 = 0.667$, $7/10 = 0.700$, $5/8 = 0.625$. The greatest is $7/10$.
- Q26. (B) The gaps are 4, 6, 8, 10, so the next gap is 12 and $30 + 12 = 42$.
- Q27. (C) Listing multiples of 8 and of 15, the first number that appears in both lists is 120.
- Q28. (B) The hundreds digit is 0, so we round down to 50,000.
- Q29. (D) $8 \text{ L } 400 \text{ mL} = 8,400 \text{ mL}$. $8,400 \times 3 = 25,200 \text{ mL} = 25 \text{ L } 200 \text{ mL}$.
- Q30. (D) $1 \text{ km} = 1,000 \text{ m}$, so $3.8 \text{ km} = 3.8 \times 1,000 = 3,800 \text{ m}$.
- Q31. (B) $465 \times 42 = 465 \times 40 + 465 \times 2 = 18,600 + 930 = 19,530$.
- Q32. (C) The digit 2 stands in the 1,00,00,000 place, so its place value is 2,00,00,000.
- Q33. (D) Write 71 as 71.00, then $71.00 - 61.11 = 9.89$.
- Q34. (C) $27 \times 201 = 5,427$, so the quotient is 201.
- Q35. (A) Make the denominators the same (12): $1/3 = 4/12$ and $3/4 = 9/12$. Adding gives $13/12 = 1 \frac{1}{12}$.
- Q36. (D) The wall is $700 \text{ cm} \times 400 \text{ cm} = 2,80,000 \text{ sq cm}$. Each tile is $20 \times 20 = 400 \text{ sq cm}$. $2,80,000 / 400 = 700$ tiles.
- Q37. (B) $32 \times 76 = ₹ 2,432$.
- Q38. (A) $3/8$ of $400 = 150 \text{ L}$ is used, so $400 - 150 = 250 \text{ L}$ is left.
- Q39. (A) After the first kilometre there are 4 more: $30 + 4 \times 8 = ₹ 62$.
- Q40. (A) $14.25 \text{ m} = 1,425 \text{ cm}$ and $1,425 / 75 = 19$ pieces.
- Q41. (C) She reads $14 \times 4 = 56$ pages, so $112 - 56 = 56$ pages are left.
- Q42. (B) $3/5$ of $45 = 27$ girls, so the number of boys is $45 - 27 = 18$.
- Q43. (A) One pen costs $204 / 12 = ₹ 17$, so 5 pens cost $5 \times 17 = ₹ 85$.
- Q44. (C) From 9:20 a.m. to 3:42 p.m. is 6 h 22 min.
- Q45. (D) The wall is $600 \text{ cm} \times 400 \text{ cm} = 2,40,000 \text{ sq cm}$. Each tile is $50 \times 50 = 2,500 \text{ sq cm}$. $2,40,000 / 2,500 = 96$ tiles.
- Q46. (B) One tap alone would take $6 \times 60 = 360$ minutes. With 5 taps the time is $360 / 5 = 72$ minutes.
- Q47. (D) In this sentence 'a piece of cake' means something very easy.
- Q48. (D) The Ganga flows east and forms the Sundarbans delta at the Bay of Bengal.
- Q49. (A) A 4-digit number cannot begin with 0, so the smallest possible first digit is 2. The remaining digits are then placed in increasing order: 2089.
- Q50. (C) Every letter moves 1 place(s) forward, so WIND becomes XJOE.