



**International Vedic Maths Olympiad 2023**  
**Upper Primary**  
**Time allowed - 1 Hour**

*Questions 1 - 25: Score 2 marks for each correct answer and 0 marks for each incorrect answer.*

1. 
$$\begin{array}{r} 9 \\ 98 \\ 987 \\ 9876 \\ + 98765 \\ \hline \end{array}$$

- A 109375      B 107935      C 109735      D 107435      E 108935

2.  $50000 - 3298$

- A 59.898      B 59.887      C 58.998      D 59.998      E 58.888

3. Which of the following is divisible by 4?

- A 465774      B 990868      C 851642      D 778302      E 444314

4.  $635042 \times 11$

- A 6985462      B 698962      C 689562      D 675462      E 6975462

5.  $115 \times 115$

- A 11025      B 11125      C 12025      D 13225      E 15625

6.  $16400 \div 25$

- A 256      B 356      C 456      D 556      E 656

7. By continual summing the digits of a number until only one digit remains, you arrive at the digital root.

What is the digital root of 536242?

- A 1      B 2      C 3      D 4      E 5

8. What is the remainder when 23460025 is divided by 9?

- A 4      B 3      C 6      D 2      E 0

9. When using Vertically and crosswise to calculate  $427 \times 223$ , what is the result of the third step before any carry digits have been added?

- A 32      B 30      C 22      D 18      E 9

10. The square of a number is 3025. What is the number?

- A 25      B 35      C 45      D 55      E 65

11. Using Nikhilam multiplication, which of the following shows the correct calculation?

$\begin{array}{r} 72-18 \\ \times 94-06 \\ \hline 67/6_48 \end{array}$	$\begin{array}{r} 72-27 \\ \times 94-04 \\ \hline 67/6_48 \end{array}$	$\begin{array}{r} 72-28 \\ \times 94-06 \\ \hline 67/_16_48 \end{array}$	$\begin{array}{r} 72-28 \\ \times 94-04 \\ \hline 67/6_48 \end{array}$	$\begin{array}{r} 72-23 \\ \times 94-06 \\ \hline 67/6_48 \end{array}$
A	B	C	D	E

12. Which of the following is 5 less than a square number?

- A 12      B 33      C 59      D 87      E 96

13.  $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10$

- A 403200      B 430280      C 453600      D 362800      E 3628800

14. A, B and C are three digits. B and C add up to 10.

$$\begin{array}{r} A B \\ \times A C \\ \hline 4216 \end{array}$$

What is the value of A?

- A 2      B 3      C 4      D 5      E 6

15.  $34\frac{2}{7} + 71\frac{3}{8}$

- A  $106\frac{14}{15}$       B  $106\frac{9}{56}$       C  $106\frac{11}{56}$       D  $106\frac{14}{56}$       E  $106\frac{9}{15}$

16.  $\frac{23}{24} - \frac{2}{5}$

- A  $\frac{67}{120}$       B  $\frac{57}{120}$       C  $\frac{19}{40}$       D  $\frac{23}{40}$       E  $\frac{77}{120}$

17. Which fraction is the largest?

- A  $\frac{5}{8}$       B  $\frac{7}{12}$       C  $\frac{11}{16}$       D  $\frac{13}{24}$       E  $\frac{31}{48}$

18.  $1423 \times 1007$

- A 1421941      B 1432961      C 14322941      D 1423941      E 1432841

19.  $988 \times 991$

- A 979108      B 986708      C 989108      D 979099      E 988108

20. A digital clock shows the time 15:37. In how many minutes will it be 1 O'Clock in the morning?

- A 437      B 463      C 523      D 563      E 623

21. The One Day International World Cup Final took place at Narendra Modi Stadium in Ahmedabad on 19th November. The stadium is the largest in the world and can seat 132000 people. Each ticket cost \$353. What was the total amount taken from sale of tickets?

- A \$44586000      B \$46596000      C \$46786000      D \$34696000      E \$44496000

22. At a fruit farm, lemons are placed in trays each holding 24. Four trays make up one box. How many boxes are needed for 21120 lemons?

- A 216      B 218      C 220      D 222      E 224

23. The artist and inventor, Leonardo da Vinci, wrote his notes in mirror writing, back to front. How many letters in this sentence would look the same in mirror writing?

## MATHEMATICS IS AMAZING, FUN AND CLEVER

A 18                      B 16                      C 15                      D 13                      E 11

24. A train travels from Delhi to Bengaluru, stopping at Nagpur and Hyderabad on the way. The distance from Delhi to Hyderabad is 1661 km. From Nagpur to Bengaluru is 1656 and from Delhi to Bengaluru is 2742 km. How far is it from Nagpur to Hyderabad?

A 465 km                      B 595 km                      C 715 km                      D 325 km                      E 575 km

25. Blinks Supermarket sells 8 kg of flour for \$5.76. Bankit Store sells 12 kg of flour for \$6.48. How much will I save when buying 20 kg of flour at Bankit Store by comparison with buying the same amount at Blinks Supermarket?

A \$3.60                      B \$2.80                      C \$2.40                      D \$2.20                      E \$1.80

**Questions 26 - 35: Score 3 marks for each correct answer and -1 mark for each incorrect answer.**

26. Maria bakes 240 cup cakes to sell at her school fete. She spends \$80 on ingredients. She sells the cup cakes for 60 cents each. At the fete she sells 220 of her cup cakes. How much more was the money she received than the amount she spent on ingredients?

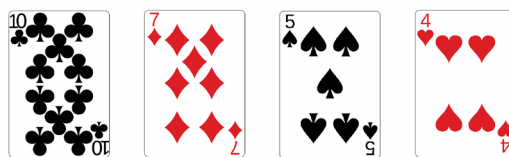
A \$48                      B \$52                      C \$54                      D \$58                      E \$64

27. A sequence starts, 2, 8, 14, 20, 26, ....

When it continues, what is the 100th number in the sequence?

A 582                      B 588                      C 594                      D 596                      E 602

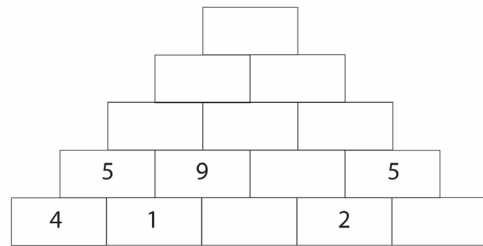
28. The four cards below are set out to show 10754. How many different numbers can be made by laying out these four playing cards (all the cards must be used for each number)?



A 6                      B 12                      C 18                      D 24                      E 30

29. What is the top number in this addition number pyramid?

- A 52      B 58      C 67      D 72      E 84



30. What is the Lowest Common Multiple (LCM) of 168 and 560?

- A 1680      B 2240      C 1176      D 7840      E 2352

31. I add up all the even numbers between 1 and 101. Then from my total I subtract all the odd numbers from 0 to 100. What is my answer?

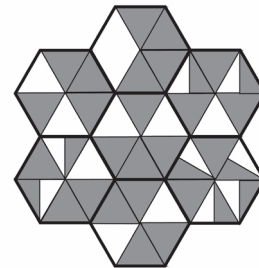
- A 0      B 50      C 100      D 255      E 2525

32. In a class of 36 children, the ratio of boys to girls is 4 : 5. If 4 boys leave and 8 girls join the class, what will then be the ratio of boys to girls?

- A 3 : 5      B 1 : 2      C 5 : 3      D 2 : 3      E 3 : 7

33. What fraction of the shape is shaded?

- A  $\frac{1}{2}$       B  $\frac{5}{12}$       C  $\frac{7}{12}$       D  $\frac{2}{3}$       E  $\frac{3}{4}$



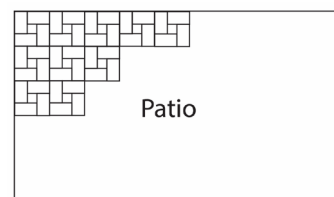
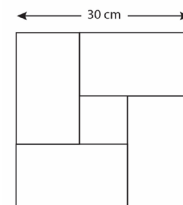
34. Four rectangular tiles and one small square tile are arranged into a 30 cm by 30 cm square as shown.

These squares are used to tile a patio.

600 rectangular tiles and 150 small square tiles are used to tile the patio?

What is the area of the patio in square metres?

- A  $9 \text{ m}^2$       B  $13.5 \text{ m}^2$       C  $17.5 \text{ m}^2$   
D  $22.5 \text{ m}^2$       E  $30 \text{ m}^2$



35. Images on a computer screen are made up of tiny dots called pixels. Each pixel is a square with edge length  $\frac{1}{96}$  of an inch. A certain screen has 2073600 pixels. What is its area in square inches?
- A 225 sq.in      B 216 sq.in      C 512 sq.in      D 256 sq.in      E 175 sq.in

**Questions 36 - 40: Score 4 marks for each correct answer and -2 marks for each incorrect answer.**

36. A rectangular field measures 48 metres by 92 metres. A barbed wire fence is to be placed around the field for which wooden posts are needed every 2 metres. How many posts are required altogether?

A 126      B 128      C 130      D 140      E 144

37. At Heathrow airport in London aeroplanes either take off or land only between 6.00 am and 11.30 pm. At 6.00 am on one day there are 380 aeroplanes parked at the airport. On that day more aeroplanes land every 90 seconds and aeroplanes take off every 70 seconds. How many aeroplanes are there parked at the Heathrow at 11.30 pm on that day.

A 128      B 160      C 180      D 210      E 230

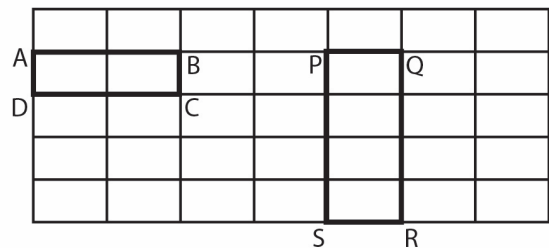
38. My roof has a leak so I place a 2 litre bucket on the floor to catch the drips. Each drip has a volume of  $\frac{1}{3}$  of a millilitre. A drip falls into the bucket every 3 seconds. How long does it take for the bucket to be filled? (1 litre = 1000 millilitres)

A 2 hours      B 3 hours      C 4 hours      D 5 hours      E 6 hours

39. There are many different types of rectangle to be seen in this grid. ABCD is one type and PQRS is another type.

What is the total number of all types?

A 80      B 120      C 280  
D 360      E 420



40. The men's world record for a 100 metre sprint is 9.58 seconds, set by Usain Bolt in 2009. How fast is this in kilometres per hour? (Answer to the nearest whole number)

A 35 km/h      B 36 km/h      C 37 km/h      D 38 km/h      E 39 km/h

## Answer Key Upper Primary IVMO 2023

Questions 1 - 25: Score 2 marks for each correct answer and 0 marks for each incorrect answer.

Questions 26 - 35: Score 3 marks for each correct answer and -1 mark for each incorrect answer.

Questions 36 - 40: Score 4 marks for each correct answer and -2 marks for each incorrect answer.

1. C	11. C	21. B	31. B
2. E	12. C	22. D	32. E
3. B	13. E	23. B	33. D
4. A	14. E	24. E	34. B
5. D	15. B	25. A	35. A
6. E	16. A	26. B	36. D
7. D	17. C	27. D	37. C
8. A	18. B	28. D	38. D
9. B	19. A	29. C	39. E
10. D	20. D	30. A	40. D

**Answer Sheet Upper Primary IVMO 2023**

Write your name in Block Capitals here

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Write your answers, A, B, C, D or E in the boxes below.

1.		11.		21.		31.	
2.		12.		22.		32.	
3.		13.		23.		33.	
4.		14.		24.		34.	
5.		15.		25.		35.	
6.		16.		26.		36.	
7.		17.		27.		37.	
8.		18.		28.		38.	
9.		19.		29.		39.	
10.		20.		30.		40.	