International Vedic Maths Olympiad 2022 Primary
Time allowed - 1 Hour

Questions 1 - 25 each carry 2 marks

1.

$$
\begin{array}{r}
3\ 5\ 6\ 4 \\
1\ 8\ 7\ 4 \\
7\ 5\ 4\ 6 \\
+\ 9\ 2\ 3\ 6 \\
\hline
\end{array}
$$

     A 2222   **B** 2220   **C** 22200   **D** 22220   **E** 222200

2. $600000 - 375072$

     A 335038   **B** 234028   **C** 224928   **D** 321618   **E** 225028

3. Which of the following is divisible by 4?

     A 368167623   **B** 488982626   **C** 317454572   **D** 47005906   **E** 38117582

4. $11.1 - 1.11$

     A 9.99   **B** 9.9   **C** 9.91   **D** 10.01   **E** 10.1

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

$$
\textbf{A}\ \begin{array}{r} 92-18 \\ \times\ 88-22 \\ \hline 80/\ 96 \end{array}
\qquad
\textbf{B}\ \begin{array}{r} 92-07 \\ \times\ 88-11 \\ \hline 80/\ 96 \end{array}
\qquad
\textbf{C}\ \begin{array}{r} 92-08 \\ \times\ 88-02 \\ \hline 80/\ 96 \end{array}
\qquad
\textbf{D}\ \begin{array}{r} 92-08 \\ \times\ 88-11 \\ \hline 80/\ 96 \end{array}
\qquad
\textbf{E}\ \begin{array}{r} 92-08 \\ \times\ 88-12 \\ \hline 80/\ 96 \end{array}
$$

6. By continual summing the digits of a number, you arrive at the digital root.
What is the digital root of 7463582?

     A 5   **B** 6   **C** 7   **D** 8   **E** 9

7. When using Vertically and crosswise to calculate 213 x 517, what is the result of the third step before any carry digits have been added?

     A 31   **B** 30   **C** 29   **D** 15   **E** 14

8. The square of a number is 7225. What is the number?

A 65   **B** 75   **C** 85   **D** 95   **E** 105

9. What is the whole number remainder for 12045 ÷ 869?

A 486   **B** 646   **C** 866   **D** 826   **E** 748

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

$$
\begin{array}{r}
A\ B \\
\times\ A\ C \\
\hline
5621
\end{array}
$$

What is the value of A?

A 4   **B** 5   **C** 6   **D** 7   **E** 8

11. 73400 ÷ 5 = 14680. Which of the following gives a quick way of dividing by 5?

A Divide by 10 and multiply by 2

B Multiply by 10 and divide by 2

C Multiply by 10 and multiply by 2

D Divide by 10 and divide by 2

E Divide by 100 and multiply by 5

12. How many of the nine numbers below are squares?

1   4   24   48   64   91   121   196   225

A 3   **B** 4   **C** 5   **D** 6   **E** 7

13. Which of the following fractions is closest to 1?

A $\dfrac{9}{10}$ B $\dfrac{10}{11}$ C $\dfrac{11}{12}$ D $\dfrac{12}{13}$ E $\dfrac{13}{14}$

14. What is the remainder when 48519872 is divided by 9?

A 0   **B** 2   **C** 4   **D** 6   **E** 8

15. What is the Highest Common Factor of 56 and 72?

A 2   **B** 4   **C** 8   **D** 16   **E** 56

16. What is the Lowest Common Multiple of 56 and 72?

A 126   **B** 252   **C** 504   **D** 1008   **E** 2016

17.

$$\frac{5}{13} - \frac{3}{10}$$

A $\frac{2}{3}$ **B** $\frac{2}{65}$ **C** $\frac{11}{65}$ **D** $\frac{2}{130}$ **E** $\frac{11}{130}$

18.

$$1\frac{7}{8} \div 2\frac{1}{4}$$

A $\frac{5}{6}$ **B** $\frac{7}{9}$ **C** $1\frac{1}{5}$ **D** $2\frac{2}{3}$ **E** $2\frac{7}{32}$

19. Which of the following is the largest?

A 0.216   **B** $\frac{28}{125}$ **C** 22.2%   **D** $\frac{109}{500}$ **E** $\frac{884}{4000}$

20. $\frac{25}{33} \times \frac{44}{125}$

A $\frac{5}{8}$ **B** $\frac{4}{15}$ **C** $\frac{4}{21}$ **D** $\frac{1}{3}$ **E** $\frac{11}{15}$

21. 35% of $680

A $208   **B** $218   **C** $228   **D** $238   **E** $248

22. 789×991

A 780899   B 7801899   C 781899   D 782889   E 782899

23. Which calculation gives the smallest answer?

A $\dfrac{2}{3} - \dfrac{1}{2}$
   B $\dfrac{3}{4} - \dfrac{2}{3}$
   C $\dfrac{4}{5} - \dfrac{3}{4}$
   D $\dfrac{5}{6} - \dfrac{4}{5}$
   E $\dfrac{6}{7} - \dfrac{5}{6}$

24. 0.21×0.0021

A 0.441   B 0.0441   C 0.00441   D 0.000441   E 0.0000441

25. Five tubes of toothpaste cost $24. What is the cost of eleven such tubes?

A $52.80   **B** $48.60   **C** $42.80   **D** $54.60   **E** $57.60

Questions 26 - 35 each carry 3 marks

26. Janice watches a film. It finishes at 8.12 pm. The film is 2 hours 36 minutes long. At what time did it start?

A 4.24 pm   **B** 5.36 pm   **C** 5.46 pm   **D** 5.48 pm   **E** 5.54 pm

27. A cargo ship is being loaded with 42000 tons of grain. 1500 tons of grain can be loaded in each hour. How many hours does it take to load the ship?

A 12 hrs   **B** 16 hrs   **C** 20 hrs   **D** 24 hrs   **E** 28 hrs

28. 3500 tickets are sold to adults and children for a theatre performance. The number of tickets sold to children is 30% less of the total than the number sold to adults. How many tickets were sold to adults?

A 1050   **B** 1225   **C** 1925   **D** 2125   **E** 2275

29. A hall floor is made with grey tiles and white tiles. What fraction of the floor is made with grey tiles?

A $\dfrac{1}{3}$ B $\dfrac{1}{2}$ C $\dfrac{3}{7}$ D $\dfrac{7}{10}$ E $\dfrac{5}{14}$

30. A cricket stadium has 104 rows and in each row there are 132 seats. At a match there are 12 989 spectators. How many spare seats are there?

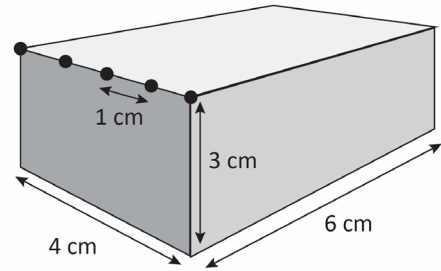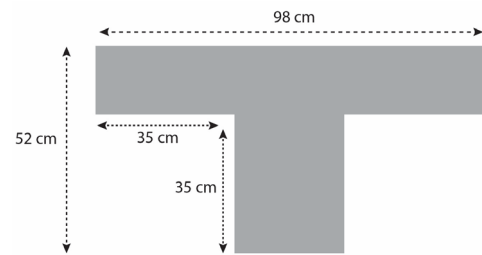**A** 729   **B** 739   **C** 839   **D** 849   **E** 869

31. A cuboid brick measures 4 cm by 3 cm by 6 cm. Dots are placed at 1 cm intervals along all 12 edges of the brick.
How many dots will there be?
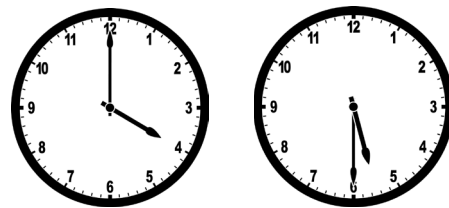

A 48   B 52   C 56   D 60   E 64

32. A "T" shape is made by cutting two squares away from a rectangle as shown. The rectangle measures 98 cm by 52 cm. Each square has side length 35 cm.
What is the area of the "T"?

A 2458 cm²   B 2646 cm²   C 2666 cm²

D 3846 cm²   E 3871 cm²

33. In 12 hours the hour hand of a clock turns through a whole circle of 360˚.
Through how many degrees does the hour hand turn between 4.00 pm and 5.30 pm?

A 18˚   B 24˚   C 30˚   D 36˚   E 45˚

34. Today is Saturday and both Amrit and Joseph go to visit the dentist. Amrit makes a return visit every 12 days and Joseph makes a return visit every 32 days. On which day of the week will they next both visit the dentist on the same day?

A Monday   B Tuesday   C Wednesday   D Thursday   E Friday

35. Adele has 5 times as many toy bricks as Rishi and this is 84 more than Rishi has. She gives Rishi enough toy bricks so that they both have the same number. How many do they each now have?

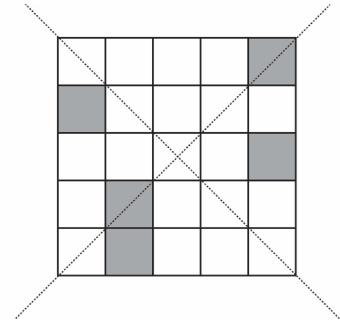A 48   B 63   C 72   D 84   E 96

36. I have a rectangular piece of paper measuring 32 cm by 18 cm. I cut it in half. I then cut each piece in half and then cut each of those pieces in half. What is the total perimeter of all the pieces?

    A 160 cm   B 200 cm   C 250 cm   D 500 cm   E Not enough information

37. How many <u>more</u> squares must be shaded so that the grid has exactly two lines of symmetry?

    A 3   B 4   C 5   D 10   E 11

38. Each house pattern is made up from short sticks and long sticks.
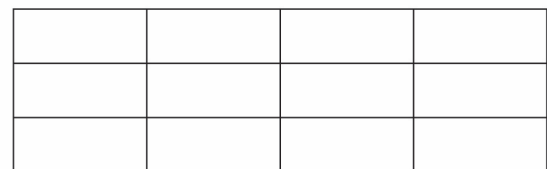
If the patterns continue, how many sticks will there be in the 80th pattern?

    A 320   B 324   C 328

        D 332   E 336

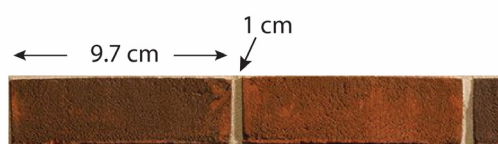**39.** There are many different types of rectangle to be seen in this grid.

For example, there are eight of these type:

What is the total number of all types?

    A 24   **B** 36   **C** 37   **D** 59   **E** 60

40. A bricklayer builds a wall with bricks. One row has 144 bricks, each of length 9.7 cm. Between each brick is a gap of 1 cm for the cement. How long is this row of bricks?

1 cm

9.7 cm

    A 1396.8 cm   **B** 1540.8 cm   **C** 1539.8 cm   **D** 1541.8 cm   **E** 1543.8 cm

Answer Key Primary IVMO 2022

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

Answer Sheet

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