

The University of the West Indies, Mona
presents
The 2025/2026 Junior Mathematics
Olympiad

Grade 4 Qualifying Round (SOLUTIONS)

1. **Soln:** (E) On close inspection, this corresponds to Meg's toy.
2. **Soln:** (C) The order they finished is

B	E	F	A	C	D
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Front
3. **Soln:** (E) If one die shows 6 then for the total to be 8, both other dice would have to show 1 and so showing a 6 is not possible.
4. **Soln:** (E) The difference between 502 and 205 is $502 - 205 = 297$ and so the new total will be increased by 297. The new total is $2025 + 297 = 2322$.
5. **Soln:** (D) In one hour there are 12 five-minute periods and so in five days, the number of five-minute periods is $12 \times 24 \times 5 = 1440$.
6. **Soln:** (B) Lila scored $39 - 14 = 25$ points and Carla scored $\frac{3}{5}$ of 25 which is $3 \times 5 = 15$.
7. **Soln:** (C) Summing to 45, we have $1 + 3 + 5 + 7 + 9 + 11 = 36$ and $1 + 3 + 5 + 7 + 9 + 11 + 13 = 49$. This means that the 37th mouse caught will be on day number 7.
8. **Soln:** (B) The first two tens digit should be greatest and the last tens digit should be least. The greatest result is

$$\begin{array}{|c|c|} \hline 8 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 7 & 3 \\ \hline \end{array} - \begin{array}{|c|c|} \hline 1 & 2 \\ \hline \end{array} = 147.$$

9. **Soln:** (C) 2 flies and 3 spiders have $2 \times 6 + 3 \times 8 = 36$ legs. 10 birds have 20 legs and so c cats must have 16 legs. This correspond to $c = 4$.

10. **Soln: (A)** From left to right, with no restrictions, the 6 possible paths are

$$RYBW, RYWB, RBYW, RBWY, RWBY, RWYB$$

With the restrictions, the 4 possible paths are

$$RYBW, RYWB, RBWY, RWYB$$

11. **Soln: (E)** The number of 7's in the range 1 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69 is $1 + 1 + 1 + 1 + 1 + 1 + 1 = 7$ and the number of 7 in the range 70 to 79 is $10 + 1 = 11$. The number of times the digit "7" appears from 1 to 80 is therefore $7 + 11 = 18$.
12. **Soln: (A)** The distance between the first and the last hurdle is $4 \times 8 = 32$ metres. The distance of the last hurdle from the finish line is therefore $60 - (12 + 32) = 16$ metres.
13. **Soln: (D)** The number of 1×1 squares is 16. The number of 2×2 squares is 9. The number of 3×3 squares is 4. The number of 4×4 squares is 1. The total is $16 + 9 + 4 + 1 = 30$.
14. **Soln: (A)** Saturdays will be on days 7, 14, etc, 91, 98. From this, we may conclude that day 94 will be a Tuesday.
15. **Soln: (D)** From the information given a is smallest, b is largest, $a \times b \times c = 24$ and $a + b + c = 11$. Of the choices given, only 164 works.
16. **Soln: (C)** The upper triangle accounts for $\frac{1}{8}$ and the lower triangle accounts for $\frac{1}{4}$. The total is $\frac{1}{8} + \frac{1}{4} = \frac{1}{8} + \frac{2}{8} = \frac{3}{8}$.
17. **Soln: (B)** At the end of day one, the snail would have climbed $3 - 2 = 1$ metre. After day 7 it would have climbed 7 metres. On the eighth day (during daytime) the snail would have travelled a further 3 metres, completing the 10 metre trip.
18. **Soln: (A)** First note that 4741 is between 4000 and 5000. Also 4 km is the same as $4 \times 1000 = 4000$ m and 5 km is the same as $5 \times 1000 = 5000$ m. This means that 4751 is between 4 km and 5 km.
19. **Soln: (E)** Around the circle, the only formation is *GBGBGBG*.

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20. **Soln: (C)** For each dog, there are 3 more legs than mouths. Since $18 = 3 \times 6$. Kim has 6 dogs consisting of 24 legs and 6 mouths.
21. **Soln: (D)** Zach's present age is $5 + 6 = 11$ and in seven years, the boy's ages will be $5 + 7 = 12$ and $11 + 7 = 18$. This gives a sum of $12 + 18 = 30$.
22. **Soln: (B)** For the week, Form 5A requires $5 \times 2 = 10$ heads. If Myra works 3 times and Ashman works 4 times per week, the number of missing heads is $10 - 7 = 3$ and so Nora works 3 days per week.
23. **Soln: (D)** When the string 2, 0, 2, 5 is written 12 times, the digit 2 appears 24 times with the 47th digit being a 2. The 48th to the 51st digits are 5, 2, 0, 2. This means that the 2 occurs $24 + 2 = 26$ times.
24. **Soln: (A)** Each hour contains 3 twenty-minutes periods and so 4 hours has $4 \times 3 = 12$ twenty-minutes periods. The distance walked is therefore $1.5 \times 12 = 18$ km.
25. **Soln: (B)** The only combination of "9 and 4" to add to 30 is $2 \times 9 + 3 \times 4 = 30$. This means that Roger ate carrots 5 days. On the three days that he ate 4 carrots, he ate 3 cabbages in total. The other 2 days he ate cabbages only. On these days the total is $2 \times 2 = 4$. The total number of cabbages ate for the week is therefore $3 + 4 = 7$.