

2024-2025 Junior Mathematical Olympiad

Qualifying Round Examination (Grade 4)

NAME_____

GRADE_____

SCHOOL_____

STUDENT CONTACT NUMBER_____

- EACH entry MUST be accompanied by a nominal entry fee of **J\$1000**
- All entries must reach the Mathematics Department, U.W.I by **Friday December 13, 2024**
- You may deliver by (a) Hand (b) Courier (c) Local Mail
- The Courier address is
**Mathematics Department, UWI
Mona
Kingston 7**
- The Mailing address is
**Junior Mathematical Olympiad
P.O. Box 94
Mona Post Office
Kingston 7**

For each question, determine the letter corresponding to the correct or best response; along with the question number, indicate this letter by circling or shading it

- Anjune made three purchases for \$1.98, \$5.04 and \$9.89. To the nearest dollar, what is the total amount of money that she spent?
(A) 10 (B) 15 (C) 16 (D) 17 (E) 18
- Jamoye had \$500 to spend at the school fair. He spent \$120 on food and twice as much on rides. How many dollars did he have left to spend on other things?
(A) 120 (B) 140 (C) 206 (D) 280 (E) 380
- On a map, a 3-centimeter length represents 18 kilometers. How many kilometers does a 17-centimeter length on the map represent?
(A) 6 (B) 102 (C) 204 (D) 864 (E) 1224
- Which of the following is largest in value?
(A) $\frac{4}{2 - \frac{1}{4}}$ (B) $\frac{4}{2 + \frac{1}{4}}$ (C) $\frac{4}{2 - \frac{1}{3}}$ (D) $\frac{4}{2 + \frac{1}{3}}$ (E) $\frac{4}{2 - \frac{1}{2}}$
- If $a * b = \frac{a \times b}{a + b}$ for positive integers a and b , then what is the value of $5 * 10$?
(A) $\frac{3}{10}$ (B) 1 (C) 2 (D) $\frac{10}{3}$ (E) 50
- What is the value obtained when 12 million is added to 12 thousand?
(A) 12,012,000 (B) 12,120,000 (C) 120,120,000 (D) 12,000,012,000
(E) 12,012,000,000
- Petra's mother bought an equally sliced 12-slice pizza for dinner. Petra ate one slice and shared another slice equally with her brother Peter. What fraction of the pizza did Petra eat?
(A) $\frac{1}{24}$ (B) $\frac{1}{12}$ (C) $\frac{1}{8}$ (D) $\frac{1}{6}$ (E) $\frac{1}{4}$

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8. When Che was a boy he could run 15 miles in 3 hours and 30 minutes. Che is now an old man and he can now walk 10 miles in 4 hours. How many minutes longer does it take Che to walk a mile now compared to when he was a boy?
- (A) 6 (B) 10 (C) 15 (D) 18 (E) 30
9. The sum of Amaya's and Bob's ages today is 24. What was the sum of their ages 5 years ago?
- (A) 14 (B) 16 (C) 17 (D) 18 (E) 19
10. A kingdom, consisting of castles and homes only, is designed in such a way that castles have 8 beds and homes have 2 beds. If, in this kingdom, there are 48 beds and 3 castles, how many homes are there?
- (A) 12 (B) 16 (C) 18 (D) 24 (E) 48
11. A plant grows at a rate of 105 cm per day. On August 01, at noon, the plant was 2 metres tall. Approximately how tall, in metres, was the plant on August 8th at noon?
- (A) 10.40 (B) 8.30 (C) 3.05 (D) 7.35 (E) 9.35
12. Principal Prince's car can travel 12 km on one litre of gas which costs \$220 per litre. Approximately how many kilometres can Principal Prince drive on \$10,000 worth of gas?
- (A) 260 (B) 320 (C) 550 (D) 720 (E) 1050
13. All the hats in Amira's collection are either green, yellow or black. She has half as many green hats as yellow hats and twice as many black hats as yellow hats. Which of the following could be the number of hats in Amira's collection?
- (A) 24 (B) 25 (C) 26 (D) 27 (E) 28
14. Seven whole numbers are added together and the result is an even number. What is the maximum number of odd numbers present in the 7 numbers that were added?
- (A) 6 (B) 4 (C) 3 (D) 2 (E) 1

15. In walking laps around a field, Gena walks twice as fast as Garth. When Garth finishes 8 laps, **altogether**, how many laps does Garth and Gena complete?
(A) 8 (B) 12 (C) 16 (D) 24 (E) 30
16. On Monday Tahir has \$200. Every day he either gets an additional \$300 or an additional amount that matches what he had on the previous day. How many different dollar amounts could Tahir have on Thursday, 3 days later?
(A) 3 (B) 4 (C) 5 (D) 6 (E) 7
17. ℓ is the units digit of the 5-digit number 2024ℓ which is divisible by 9. What is the remainder when the number 2024ℓ is divided by 8?
NOTE: If a number is divisible by 9 then the sum of the digits is divisible by 9.
(A) 1 (B) 3 (C) 5 (D) 6 (E) 7
18. Twenty years ago Alfred was half as old as he is today. How old was Alfred 10 years ago?
(A) 10 (B) 20 (C) 30 (D) 40 (E) 50
19. Simon was asked to add up all the integer numbers from 1 through 9 but mistakenly left out one of the numbers. Simon's incorrect sum is a square number. Which number did Simon leave out?
(A) 5 (B) 6 (C) 7 (D) 8 (E) 9
20. How many whole numbers between 1 and 60 contain the digit 3 at least once?
(A) 13 (B) 14 (C) 15 (D) 16 (E) 17
21. There are 144 tissues in a box of tissues and Val uses 120 of these boxes in 3 days. On average how many tissues does Val use per minute?
(A) 5 (B) 4 (C) 3 (D) 2 (E) 1
22. Of the positive integers from 1 (inclusive) to 111 (inclusive), how many times does the digit 1 appear?
(A) 25 (B) 26 (C) 34 (D) 35 (E) 36

23. Every day, Laurie falls asleep 14 hours after he wakes up on that day. Laurie always sleeps for 8 hours at a time. Laurie fell asleep at 9 PM on Saturday. What time did Laurie wake up on Friday (the previous day)?
- (A) 6 AM (B) 7 AM (C) 8 AM (D) 9 AM (E) 10 AM
24. In weights, you are told that ■, ■, ■, ■ balance ♠, ♠ and that ♠, ♠, ♠ balance ★, ★. Which of the following would NOT balance ★, ♠, ■?
- (A) ■, ♠, ★ (B) ■, ■, ■, ★ (C) ■, ■, ♠, ♠ (D) ★, ★, ■, ■
(E) ♠, ■, ■, ■, ■
25. Shari's 7-digit bank account number has 5 distinct (different) digits. For example, one possibility for her account number is 9871071. Shari adds all seven digits of her account number and got S . Based on the information given, what is the largest possible value of S ?
- (A) 52 (B) 48 (C) 53 (D) 63 (E) 68

Please write your name here_____