**Instructions : Choose the letter of the correct answer.  In all cases, E) NOTA means “none of these answers”.**

1. Justin is trying to figure out when his turn is for the gymnastics competition. His turn can be found by finding the 56th number when the pattern “1, 2, 3, 4, 5, 1, 2, 3, 4, 5, …” repeats.  When will Justin’s turn be?

**A. 1st B. 2nd   C. 3rd D. 4th E. NOTA**

2. Cayle and Jamie are trying to solve a math problem before they enter the gymnastic competition. The question is: Which of the following is the correct way to write 1,988,000,000,000,000,000,000,000,000,000 kg in scientific notation?

**A) 0.1988 x kg B. 1.988 X kg  C.19.88 x kg**

**D) 198.8 x kg   E. NOTA**

3. What is the *remainder* after dividing Julia’s national ranking in gymnastics by Odessa’s national ranking when Julia is 1435th in the nation and Odessa 18th?

1. **3 B. 13 C. 18 D. 79 E. NOTA**

4.  Joanna and Cynthia are bored waiting for their turn. Joanna decides to quiz Cynthia with an interesting math question: Which of the following is not an example of a polyhedra?

1. **Cube B. Icosahedron C. Octahedron D. Sphere**

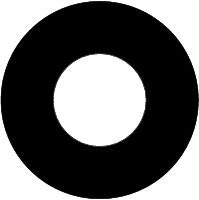
**E. NOTA**

5.  Victoria’s gymnastics coach will only let Victoria leave if she solves the following math problem: What is the sum of all integers from 1 to 150, inclusive?

1. **5050 B. 11225 C. 11325 D. 22650 E. NOTA**

6. What is the area of the gymnastics ring (shaded region) below assuming that it is two dimensional and the radius of the outer circle is 4 and the radius of the inner circle is 3?

Hint : The area of a circle can be found by A = πr2 where r is the radius.



1. **5π B. 7π C. 9π D. 16π E.NOTA**

7. Rhythmic gymnastics is a sport in which individuals or groups of five or more manipulate one or two pieces of apparatus: [rope](https://en.wikipedia.org/wiki/Rope_(rhythmic_gymnastics)), [hoop](https://en.wikipedia.org/wiki/Hoop_(rhythmic_gymnastics)), [ball](https://en.wikipedia.org/wiki/Ball_(rhythmic_gymnastics)), [clubs](https://en.wikipedia.org/wiki/Clubs_(rhythmic_gymnastics)), [ribbon](https://en.wikipedia.org/wiki/Ribbon_(rhythmic_gymnastics)) and freehand. In how many ways can Alanna manipulate one piece at a time, if she will manipulate all six pieces, and order matters?

1. **6 B. 21 C. 30 D. 720 E. NOTA**

8. George’s favorite part of rhythmic gymnastics is ribbon. One day, his friend Justin asked, “Wow George, that is so beautiful! How long is it?”, “6 meters”. Which of the following is the best approximation of George’s rhythmic gymnastics ribbon in inches? (Hint: 1 inch is approximately 2.5 cm)

1. **2.4 inches B. 6 inches C. 210 inches     D. 240 inches E. NOTA**

9. Men's gymnastics was on the schedule of the first modern Olympic Games in:

1. **1896 B. 1924 C. 1928 D. 1960 E.NOTA**

10.  Erik won’t tell his mom his fantastic vault score as he wants it to be a surprise. He did give her a clue: His score is the greatest common factor of 136 and 221. What was his score?

1. **9 B. 13 C. 17 D. 21 E) NOTA**

11. One of the events in men’s gymnastics is the pommel horse where a man swings his body methodically and quickly. Alan has swung his body 150 meters in 12 seconds. How many meters per minute is he swinging his body?

1. **12.5 m/min B. 25 m/min   C.  750 m/min**

**D. 1250 km/min   E. NOTA**

12.  Trampoline routines and tricks are performed using a double mini trampoline and in a synchronized event where two athletes perform at the same time on two different trampolines. Jamie can do 17 spins every 3 minutes and Justin can do 12 spins every 5 minutes. How many more spins per minute can Jamie do compared to Justin? Express your answer as a simplified fraction.

1. **B. C. D. E. NOTA**

13. In Acrobatic Gymnastics, athletes perform handstands, holds, and balances while other members of the team throw and catch their team mates. Allison, Jamie, Kevin, and Julia are the members of the Chiles Acrobatic Gymnastics team and they are forming a line to enter a competition.  What place is *Jamie* in line if:

I.  Kevin always has to be right in front of Julia.

II. Allison likes to play with Jamie’s hair so she chooses to stand right behind her.

III. Julia desires to be the last person to enter the competition.

IV. Jamie and Julia dislike each other and decide not to stand next to each other

1. **1st         B. 2nd C. 3rd D. 4th E. NOTA**

14. After performing a fantastic backflip, Jessica experiences extreme back pain. She asks Brian for help but he claims that he will only help Jessica if she simplifies the following expression: [2000 – 201 202 + 1764 196(1 3)](787787)

1. **-38605 B. -33310 C. 38599 D. 38605 E. NOTA**

15. Right before the competition, the competitors must stretch so they do not hurt themselves. If Jason stretches in half the time that Justin stretches, Jaewon stretches two times longer than Justin, and Jaewon stretches for 4 minutes, how long does Jason stretch for?

1. **1 min. B. 2 min. C. 4 min. D. 8 min.**

**E. NOTA**

16. Because Jason did not stretch the proper amount of time, he pulls a muscle while doing a flip. Jason is then rushed to the hospital. If the hospital is 3 miles away, how far away is the hospital in yards?

1. **1750 B. 1760 C. 5250 D. 5280 E. NOTA**

17. Alberic has been doing gymnastics since he was only 20 months old! If he was born on this day in 1998 (date on top of test), about how many months has Alberic done gymnastics for?

1. **184 B. 196 C. 204 D. 216 E. NOTA**

18. Kevin believes the perfect gymnastics form is:



What shape does the person most closely resemble if the toes are connected to the hands by imaginary lines?

**A. Circle B. Square C. Trapezoid D. Triangle E. NOTA**

19. Victoria’s favorite gymnastics event is the “balance beam”. The balance beam is a long padded beam that is about 49 inches from the ground and about 198 inches long. Victoria begins her routine in the middle of the balance beam, moves forward 20 inches, moves backwards 36 inches, spins in place two times, moves backwards six inches, and finally moves forward 20 inches. How far away from her original position is she at the end of this routine?

1. **0 inches B. 2 inches C. 22 inches**

**D. Victoria fell off the beam E. NOTA**

20. Since Justin and Jaewon are best friends, they love participating in “synchronized trampoline” where they jump and tumble on a trampoline together. They are awarded points depending on how well they work together as well as their form and the difficulty of the moves. They are awarded 4 points for every tumble Justin does and 2 points for every tumble Jaewon does. If Justin and Jaewon want 20 points from tumbling, how many tumbles does Justin have to do if Jaewon does 4 tumbles?

1. **2 B. 3 C. 4 D. 5 E. NOTA**

21. The “floor” event is a gymnastics event that has participants perform on a 12 meter by 12 meter square mat. What is the area of this mat in square meters?

1. **24 B. 48 C. 132 D. 156 E. NOTA**

22. Daniel and Brian were previously professional gymnasts. They were invited to return as judges on the condition that the amounts they get paid are prime numbers and greater than the least common multiple of 7 and 10. Which of the following is an amount that they *could* get paid?

1. **2 B. 87 C. 91 D. 97 E.NOTA**

23. There are three phases in a tumbling pass: take off, flight, and landing. If take off takes 0.05 minutes, flight lasts for 9 seconds, and landing takes 2 seconds, how long does it take to complete a tumbling pass in seconds?

1. **11.05 B.  11.5 C. 14 D. 41 E. NOTA**

24.If there are 20 people participating in the gymnastics event, what percentage of them will win the gold medal if no one tied?

**A. 1 B. 5 C. 10 D. 50 E. NOTA**

25. “Uneven bars” is an event where the gymnast are on two horizontal bars set at different heights. Participants are to perform swinging, circling, transitional, and release moves that may pass over, under, and between the two bars. If the bars are 4 feet apart horizontally and 3 feet apart vertically, what is the distance between bars in feet (Thickness of the bars is negligible)?

1. **3 B. 4 C. 5 D. 6 E. NOTA**

26. Cayle is a diva and has 10 tops, 5 pairs of pants, and 10 pairs of socks to wear to the gymnastics event, and each outfit consists of 1 top 1 pair of pants, and a pair of matching socks.  If she wants to wear a different outfit for each event, and she is participating in 5 events, how many outfit combinations are possible for Cayle to wear?

1. **25 B. 95 C. 100 D. 500 E. NOTA**

27. Vault is a gymnastics event where participants sprint down a runway before hurdling onto a spring board. Andrew initially runs at a speed of two feet a second. He accelerates to a speed of 10 feet a second. By what percentage did his speed increase?

1. **5 B. 20 C. 400 D. 500 E. NOTA**

28. A former event for rhythmic gymnastic is rope. How many ways are there to arrange the letters in the word “ROPE”?

1. **4 B. 24 C. 120 D. 240 E. NOTA**

Use this information for questions 29 and 30: Townsend competes in rhythmic gymnastics and he receives the scores of 10, 8, 12, 8, and 7 from the judges.

29. What is the average of Townsend’s scores?

1. **B. 9 C. 10 D. 11 E. NOTA**

30. What is the range of Townsend’s scores?

**A. 3 B. 4 C. 5 D. 8 E. NOTA**