

ELEMENTARY – MUSIC CAPITALS

You have 60 minutes to complete the following 30 multiple choice questions. Choices A through D are answer choices for every problem. Choice E stands for “none of these answers”, or NOTA. Scoring is as follows: 5 points for a correct answer, 1 point if left unanswered, and 0 points for an incorrect response. Units are assumed. Diagrams not drawn to scale.

1. Vera and Lindsay are packing for their trip and wonder who has the bigger suitcase. Vera's suitcase measures 15 x 10 x 20 inches while Lindsay's measures 10 x 20 x 15 inches. Who has the bigger suitcase, and how big is it?

A. Lindsay; 45 in³ B. Vera; 45 in³ C. Vera; 3000 in³ D. Same size E. NOTA

2. They begin to drive to their first destination, Miami! While they drive down the highway, they see road signs with numbers that go in a pattern. They decide to have a competition to see who can guess the next number correctly. If the numbers so far have been 2, 8, 14, and 20, what should Lindsay guess to be right?

A. 24 B. 25 C. 26 D. 27 E. NOTA

3. Nearing Miami, they forget which of the three turns they should take. Thankfully a friendly stranger named David helps them and says, “It is not the left turn.” What is the probability that they choose the correct turn now?

A. $\frac{1}{3}$ B. 3 C. $\frac{1}{2}$ D. 2 E. NOTA

4. They chose the correct turn! After arriving in Miami, they visit a music store which is owned by Venkat. Venkat organizes his CD's into four sections: Latin (g), EDM, rap, and classical. He has 100 Latin CDs, and 150 rap CDs. The number of EDM CDs he owns are 2 times the sum of Latin and rap CDs, and half the amount of classical CD's. How many classical CDs does Venkat have?

A. 100 B. 2505 C. 500 D. 1000 E. NOTA

5. Vera and Lindsay help Venkat organize his store a bit. To thank them, he gives them tickets to a Lil Fish concert. It takes Vera 90 minutes to get ready, and it takes Lindsay 75 minutes. If Vera starts getting ready at 5:00 PM, and Lindsay starts 30 minutes after her, what time will they both be ready?

A. 6:00 PM B. 6:15 PM C. 6:30 PM D. 6:45 PM E. NOTA

6. They start walking to the concert and see Lil Fish fans on the way. The number of fans they counted by the time they reached their destination was the same value of “x” in the equation $3x=87+18$. How many fans did they count?

A. 3 B. 21 C. 35 D. 63 E. NOTA

ELEMENTARY – MUSIC CAPITALS

7. When arriving, Lindsay notices how much area the concert venue is taking up. She walks around the entire rectangular perimeter to see exactly how big the place is. When she goes back to Vera, she tells her, "This place is huge! It measures 1000 feet by 1000 feet!" What is the area of the concert venue?

- A. 2000 ft² B. 4000 ft² C. 100000 ft² D. 1000000 ft² E. NOTA**

8. The next day, they take a ferry to New Orleans. The ferryman, Alex says that he will give them free tickets if they can help him convert $\frac{3}{25}$ into a decimal. What should they say to get the free tickets?

- A. 0.06 B. 0.12 C. 0.24 D. 0.75 E. NOTA**

9. They arrive in New Orleans, which is the birthplace of jazz. They meet a guy, Filippo, that asks them "What is $\frac{5}{6}$ divided by $\frac{1}{3}$?" Vera answers and gets it correct! What did she say?

- A. $1\frac{1}{2}$ B. $2\frac{1}{2}$ C. $1\frac{1}{3}$ D. $2\frac{1}{3}$ E. NOTA**

10. Filippo is holding a 3 foot by 2 foot rectangular sign with an area of 6 feet² for a jazz festival. He thinks more people will see the sign if it's bigger. He asks Vera what the area of the sign would be if its sides were tripled. What does she answer?

- A. 9 feet² B. 18 feet² C. 36 feet² D. 54 feet² E. NOTA**

11. Lindsay and Vera planned to meet their friend, Kaitlyn at her apartment building. They arrive at a long street full of apartments. If Kaitlyn lives in apartment #10 and the first apartment is #1, how many prime numbered apartments will they pass?

- A. 3 B. 5 C. 7 D. 9 E. NOTA**

12. Kaitlyn takes them on a tour through Musical Legends Park that contains many statues of New Orleans' past musical figures. As they pass two statues, Kaitlyn says, "Here is Chris Owens and Allen Toussaint!" Kaitlyn tells them as they pass two statues. What is the ratio between vowels and consonants of both statues' names?

- A. 3:5 B. 3:8 C. 9:16 D. 9:25 E. NOTA**

ELEMENTARY – MUSIC CAPITALS

13. After a fun day at the park, Kaitlyn heads home and Lindsay and Vera start packing for their next destination, Atlanta! Vera has 7 shirts and 8 pants she needs to pack. Lindsay has 12 shirts and 5 pants. Given an outfit is a shirt and pair of pants, how many different outfits can Vera choose with the clothes she has?

- A. 15** **B. 17** **C. 56** **D. 60** **E. NOTA**

14. Using the information from the previous question, how many different outfits can Lindsay wear with the clothes she has?

- A. 15** **B. 17** **C. 56** **D. 60** **E. NOTA**

15. The next day they start driving to Atlanta. If it is exactly 480 miles away from New Orleans, and they are driving at a constant rate of 24 miles every half-hour, how long, in hours, will it take them to reach their destination?

- A. 10** **B. 20** **C. 30** **D. 40** **E. NOTA**

16. Before they start exploring Atlanta, Lindsay is hungry and goes to her favorite place there: Atlanta Bread Company. On the menu, she sees three different things she wants to order, but she only has \$23! If the three food items cost \$8, \$10, and \$15. How much money will she have left if she ends up spending as much money as possible?

- A. \$0** **B. \$5** **C. \$8** **D. \$13** **E. NOTA**

17. Vera asks Lindsay as she eats her food, “Did you know that Atlanta is known as the capital of hip-hop?” Just as she finishes the sentence, she sees a group of frogs behind Lindsay! She tells her that the number of frogs she saw is equal to the largest integer solution for the inequality $f < 12 \times 5 - 8 \times 5 \div 2$. How many frogs did Vera see?

- A. 39** **B. 40** **C. 129** **D. 130** **E. NOTA**

18. The Beatles are Vera and Lindsay’s favorite band, so they decide to go and see the stadium they played at on August 18, 1967. How many full years have passed since then?

- A. 51** **B. 52** **C. 53** **D. 54** **E. NOTA**

19. The World of Coca-Cola is also located in Atlanta. Taking a break from their musical adventure, Lindsay and Vera decide to go explore there. They see a shelf full of Coke cans with different names on them. If there are 11 cans that have Lindsay’s name on it and 44 other cans, what is the probability that she will not grab a can with her name on it if she reaches blindly?

- A. $\frac{1}{5}$** **B. $\frac{1}{4}$** **C. $\frac{3}{4}$** **D. $\frac{4}{5}$** **E. NOTA**

ELEMENTARY – MUSIC CAPITALS

20. After going to the World of Coca-Cola, they walk around and see Jae and Daniel performing on a street corner, in front of a crowd. It takes Vera 360 seconds to get through the crowd, but Jae sees Lindsay and helps her get through, so it only takes her 48 seconds. What is $\frac{360}{48}$?

- A. 5** **B. 7 ½** **C. 8** **D. 8 ½** **E. NOTA**

21. Jae and Daniel announce that they will take a song request from whoever can correctly solve the following equation the fastest:

$$5x = 10(3-x)$$

What is x?

- A. 2** **B. 3** **C. 5** **D. 10** **E. NOTA**

22. Vera wins, but can't choose between her favorite Beatles songs: "Hey Jude" and "Help!". To help her decide, she rolls a number cube. If the number she rolls is greater than number of Beatles members (4) then she will choose "Hey Jude". What is the probability that she will choose "Help!"?

- A. $\frac{1}{2}$** **B. $\frac{1}{3}$** **C. $\frac{2}{3}$** **D. $\frac{3}{4}$** **E. NOTA**

23. They start driving to Nashville, but their car breaks down. Luckily, Amy and Olivia stop to help them. If it takes 2 people 1 hour to fix a car, how long, in hours, will it take for Vera and Lindsay to get back on the road, if they all work together?

- A. $\frac{1}{2}$** **B. 1** **C. 2** **D. 4** **E. NOTA**

24. They get tired and stop by Chattanooga. What is the number of distinct letters in "Chattanooga" divided by the number of letters in the word?

- A. $\frac{3}{11}$** **B. $\frac{5}{11}$** **C. $\frac{7}{11}$** **D. $\frac{9}{11}$** **E. NOTA**

25. When they get to Nashville, the first thing they do is go see a performance at Ole Opry House, a famous country music venue. They enjoy the performance and walk back to their hotel after. Unfortunately, they get lost, and instead, walk in a triangle. What is the area of the triangle, in square units, with base 14 and height 3? (Area = $\frac{b \times h}{2}$ where b = base and h = height)

- A. 7** **B. 21** **C. 28** **D. 42** **E. NOTA**

ELEMENTARY – MUSIC CAPITALS

26. The next morning, they go to the Country Music Hall of Fame. The entry fee cost 10 dollars a person, but in addition to that, Vera and Lindsay each buy one special tour ticket. If the cost of a tour tickets is equal to the sum of the denominator and numerator of $\frac{24}{18}$ when simplified, how much money do they spend in total?

- A. \$14** **B. \$34** **C. \$42** **D. \$62** **E. NOTA**

27. On the special tour, their tour guides, Nihar, tells them that Billy Ray Cyrus is from Nashville! As big Billy Ray Cyrus fans they know he has released 12 albums and 44 singles. What is the lowest integer value of x , so that $12x > 44$?

- A. 3** **B. 4** **C. 5** **D. 6** **E. NOTA**

28. That night, they see a country music performance in the park. They each buy a banner in support of the artists. Vera's banner is 2 feet x 3 feet, and Lindsay's banner is 14 inches x 30 inches. What is the area of the larger banner?

- A. 6 feet²** **B. 6 inches²** **C. 420 feet²** **D. 420 inches²** **E. NOTA**

29. They head back to the hotel, but their room key scanner is broken. When the correct room key is scanned, the door only unlocks half of the time. If Vera and Lindsay each have one (correct) room key, and they each try once, what is the probability that they cannot get in?

- A. $\frac{1}{4}$** **B. $\frac{1}{2}$** **C. $\frac{3}{4}$** **D. 1** **E. NOTA**

30. They arrive home and show their friends all the pictures they took on the road trip! Brandon asks how many pictures they have in total. Instead of just telling him, they tell him to solve for it. The number of pictures Vera has is equal to three times the number of questions on this test. The number of pictures Lindsay has is equal to 60 less than two times the number of pictures Vera has. What is the number of total pictures?

- A. 90** **B. 120** **C. 150** **D. 210** **E. NOTA**