**Choose the letter of the correct answer. In all cases, E. NOTA means "none of these answers." Good luck on this adventure around the world! ☺**

1. "Happy New Year" can be translated "Xin nian kuai le" in Chinese, "Bonne année" in French, "Seh heh bok mani bat uh seyo" in Korean, "Hauoli makahiki hou" in Hawaiian, "Felice anno nuovo" in Italian, and "Nav varsh ki subhkamna" in Hindi.

What is the average number of letters required to say "Happy New Year" for the six languages listed above, not including English?

**A. 10 B. 12 C. 14 D. 16 E. NOTA**

2. Katie wants to decorate the perimeter of her ceiling with lights. If her rectangular ceiling has dimensions 4 yards by 5 yards, what is the perimeter of her ceiling in **feet**?

**A. 9 B. 18 C. 27 D. 54 E. NOTA**

3. Find the least common multiple of 40 and 48.

**A. 8 B. 16 C. 120 D. 240 E. NOTA**

4. Joyce and Cici need to measure the length of their dinner table to buy a table cloth for their New Year party. However, they keep getting different measurements. Find the sum of the median, mode, and range for the list of measurements below (all numbers in list and answers are in inches):

65, 68, 62, 64, 63, 64, 65, 63, 68, 63

**A. 133 B. 134 C. 135 D. 136 E. NOTA**

5. Joyce and Cici are now buying fun things for their New Year party. The cashier rings up their total, and it's $120. But since it's New Year's Eve, they get a 15% discount! Not worrying about tax, how much do they have to pay after the discount?

**A. $15 B. $18 C. $102 D. $105 E. NOTA**

6. Simplify: 

**A. 36 B. 49 C. 64 D. 81 E. NOTA**

7. Every New Year's Eve, crowds of people gather at Times Square in New York to watch the ball drop at midnight. If there are one million people in Times Square, and they are either single or part of a couple, how many couples are there if  of them are single?

**A. 250,000 B. 375,000 C. 500,000 D. 750,000 E. NOTA**

8. Jessie wants to drink some grape juice to celebrate the new year. She has 10 ounces of a mixture of water and pure grape juice. Three ounces of it is pure grape juice and the remaining seven ounces is water. Jessie finds the mixture too strong, so she keeps adding water until the mixture is 80% water by weight. How many ounces of water does Jessie need to add?

**A. 5 B. 5.6 C. 8 D. 10 E. NOTA**

9. What is 18.75% expressed as a fraction in lowest terms?

**A.  B.  C.  D.  E. NOTA**

10. People in the Philippines wear polka-dotted clothes on New Year's Eve because the polka-dots resemble coins, which represent prosperity. Assume the number of polka-dots a person wears is directly related to his or her height. If Doreen is 64 inches tall and wears 48 polka-dots, how many polka-dots will Jessie, who is 60 inches tall, wear?

**A. 44 B. 45 C. 46 D. 47 E. NOTA**

11. On New Year's Eve in Denmark, people throw dishes at the doors of their friends' houses. The more broken pieces from dishes you find at your door, the more friends you have. Brian, Daniel, and Nick are arguing over who has more friends. Brian has  broken pieces, Daniel has broken pieces, and Nick has broken pieces. YOU decide. Based on this evidence, who has the most friends?

**A. Brian B. Daniel C. Nick D. All have the same number of friends E. NOTA**

12. In Prague, the capital of the Czech Republic, fireworks are displayed starting at noon on New Year's Eve day. If 30 sets of fireworks are displayed from noon to 6 pm, and 240% more than that from 6 pm to midnight, how many **total** sets of fireworks were displayed from noon to midnight?

**A. 72 B. 102 C. 132 D. 162 E. NOTA**

13. In Puerto Rico, children throw pails of water out of their windows at midnight to rid their houses of evil spirits. Andrew fills up his cylindrical bucket with water. Using the formula  where r=ft. and h=ft., find the volume, V, of water in Andrew's bucket in **inches cubed**.

**A. 30 B. 90 C. 120 D. 180 E. NOTA**

14. What is the greatest common factor of 84, 112, and 154?

**A. 2 B. 4 C. 7 D. 14 E. NOTA**

15. Justin is going to Tiffany’s house for a New Year’s Party. However, he gets confused as to where Tiffany’s house is. Beginning from his house, Justin walks one mile due east, 3 miles due north, 6 miles due west, 7 miles due south, and 5 miles due east. Ok, Justin is tired and decides to return home. How many miles is Justin from his home if he takes the shortest route?

**A. 22 B. 11 C. 5 D. 4 E. NOTA**

16. An Irish New Year tradition is banging on the doors and walls with Christmas bread to chase the bad luck out and bring good luck in. You start out banging 25 times a minute, but then as midnight approaches, you bang 40 times a minute. What is the percent increase in banging per minute?

**A. 15 B. 30 C. 50 D. 70 E. NOTA**

17. In Japan, the temple bell rings a certain number of times near midnight on New Year's Eve to symbolize the removal of troubles gained that year. Find x, the number of times the bell rings, using the equation below:



**A. 105 B. 108 C. 111 D. 114 E. NOTA**

18. Simplify: 

**A. 1,432,578 B. 2,457,877 C. 3,456,393**

**D. 4.839 • 108043 E. NOTA**

19. Katherine is at her house located at (-1, 1) when Nilay comes to visit. Katherine knows Nilay is going to ask her out for New Year’s and Katherine doesn’t want this. So, she starts to run away at a constant rate in a constant direction. After two minutes of running, Katherine is located at (5, 5). What will Katherine’s location be after four more minutes of running?

**A. (13, 17) B. (17, 13) C. (11, 9) D. (9, 11) E. NOTA**

20. Let x☺y =. What does 5☺6 equal?

**A. -17 B. -5 C. 5 D. 17 E. NOTA**

21. Many people buy new clothing to celebrate the New Year. Allison's mom bought her 5 new shirts, 2 new pants, and 1 new scarf. If Allison **only** chooses from her new clothing, how many different outfits can she wear if the scarf is optional (but obviously she needs to wear a shirt and pants)?

**A. 5 B. 10 C. 15 D. 20 E. NOTA**

22. Diwali is a five-day New Year celebration in India. Some people believe that the goddess of wealth, Lakshmi, will visit their house if it is lit, beautifully decorated, and clean. Your room is 12 feet wide, 12 feet long, and 10 feet high. Find the area in **feet** **squared** you must clean if you clean the four walls and the floor only.

**A. 144 B. 384 C. 624 D. 768 E. NOTA**

23. If 6 firecrackers and 4 lighters produce 27 fireworks, then how many fireworks do 10 firecrackers and 15 lighters produce? Use the equation , where a=the number of firecrackers, b=the number of lighters, and y=the number of fireworks produced.

**A. 3 B. 10 C. 20 D.30 E. NOTA**

24. You want to buy a New Year's gift for your friend. You see an item you want to buy for your friend in three different stores! Store 1 says the price is $25 with 30% off, Store 2 says the price is $20 with 15% off, and Store 3 says the price is $30 with 30% off, BUT you also have a "take an additional 10% off" coupon for Store 3 which you can use after the 30% discount. Which store should you buy the gift from if you want to spend the least amount of money?

**A. Store 1 B. Store 2 C. Store 3**

**D. Can't solve E. NOTA**

25. In the right triangle below, what is the length of the side labeled x (Figure not drawn to scale)?

**25**

**7**

**x**

**A. 18 B. 19 C. 20 D. 21 E. NOTA**

26. Which equation of the line below has a slope **perpendicular** to the slope of ?

**A. 4x – 6y = 19 B. 4x + 6y = 19 C. 9x – 6y = 21**

**D. 9x + 6y = 21 E. NOTA**

27. If , which of the following answers is **NOT** a possible value for x?

**A. -5 B. -4 C. -3 D. -2 E. NOTA**

28. Farrah and Laurie are going to prepare to bake a cake together on New Year's Eve. Farrah can prepare to bake one cake in 20 minutes while Laurie can prepare to bake one cake in 30 minutes. How many minutes will it take them to prepare to bake one cake together?

**A. 10 B. 12 C. 14 D. 16 E. NOTA**

29. In China, red envelopes called "hong bao" containing money are given to children. In a basket, there are 100 randomly-mixed red envelopes each containing $1, $5, $10, or $20. If there are 37 red envelopes containing $1, 18 containing $5, and 4 times as many containing $10 as $20, what is the chance you choose a red envelope with $20?

**A.  B.  C.  D.  E. NOTA**

30. If today, December 14, 2013, is Saturday, then on what day of the week does New Year, January 1, 2014, fall on?

**A. Monday B. Tuesday C. Wednesday**

**D. Thursday E. NOTA**

**Congratulations on completing your New Year adventure around the world! If you finish early, go back and check your answers.**

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=C1dThwylFZZA4M&tbnid=HR10mfzJvQspRM:&ved=0CAUQjRw&url=http://www.mama-writes.com/a-great-and-happy-new-year-2013-to-everyone/&ei=DiVMUqzmN4mc9QTf04HwAg&bvm=bv.53371865,d.aWc&psig=AFQjCNH7nRZfpZoJZJ2HKpgzMWSNuWjHMg&ust=1380808319662572)