Note: "e. None of these" is a choice for every question, in case the answer is not given or there is a problem with the question.

1. $2\frac{2}{5} \div (\frac{2}{3} \div \frac{2}{5}) = ?$
   a. 4 b. $^{3}/_{4}$ c. $^{3}/_{5}$ d. $^{36}/_{25}$

2. $2012_3 + 126_9 = ?$
   a. 162_{10} b. 20202_3 c. 202_9 d. 2138_{12}

3. What is the surface area in square feet of Kayley's secret treasure box that is a right rectangular prism with dimensions of 6 inches, 9 inches, and 15 inches?
   a. 258 sq. in b. $3^{7}/_{8}$ sq. ft. c. $6^{3}/_{4}$ sq. ft. d. $2^{1}/_{4}$ sq. ft.

4. What is the positive difference between LCM(15,30) and GCF(15,25)?
   a. 30 b. 60 c. 90 d. 25

5. If a☺b = $a^2 + 2b$, find 4☺(3☺2).
   a. 52 b. 64 c. 45 d. 42

6. Simplify: $9^0 + 7^1 + 5^2 + 3^3$
   a. 49 b. 60 c. 68 d. 32

7. Varsha buys Girl Scout cookies with a $20 bill. If each box costs $3.50 and there is no tax, how much will she have left if she buys as many boxes as she can?
   a. $3.50 b. $3.00 c. $2.50 d. $2.00

8. According to Heather's survey of 30 students, the heights of 6th graders range from 55 inches to 69 inches, and the mode of the heights is 62 inches. Her frequency chart showed the interval of 60 – 64 inches to have 13 students. If the sixth grade has 330 students enrolled, and her sample is representative of the entire grade, how many students would be expected to be 60 – 64 inches in height?
   a. 140 b. 139 c. 143 d. 134

9. Simplify: $[6 + 20 \div 4 \times 2] + [(6 + 20) \div 4 \times 2]$.
   a. 34 b. 26 c. 32 d. 29

10. In how many ways can CLOPTON be misspelled, if the correct letters are always used?
   a. 2520 b. 5040 c. 720 d. 2025

11. Daniel leaves his lunch box in math class the first day of school, leaves 3 pencils on the second day, 6 homework assignments on the third day, and 10 notebooks on the 4th day. How many markers did he leave in math class on the 10th day?

a. 89 b. 150 c. 55 d. 24

12. A box on the classroom counter contains 3 red marbles, 5 blue marbles, and 8 green marbles. Kyoka takes a marble and puts it in her pocket, then Melina takes one and rolls it across the room. What is the probability that Kyoka's marble is blue and Melina's is green?

a. $^{5}/_{16}$ b. $^{5}/_{48}$ c. $^{1}/_{16}$ d. $^{1}/_{6}$

13. Sixty students are on the sixth grade math team. 42 of them, including Karthik, are on the advanced studies team and 27, including Lauren, are in the band. If 5 are in neither the band nor advanced studies, how many are in both?

a. 74 b. 14 c. 27 d. 42

14. Devin buys a NOOK for $149.95 with a coupon for $25 and a discount card that gives him 20% off all purchases. The coupon amount is deducted after the percentage discount. What is the regular price of a NOOK at this store?

a. $ 218.69 b. $ 222.95 c. $ 209.95 d. $ 209.74

15. Compute: $\sqrt{2.25} + \sqrt{1\frac{7}{9}}$

a. 3.92 b. 1.83 c. $^{35}/_{9}$ d. $^{17}/_{6}$

16. Mariam drew square ABCD with side length 10 cm. She then made E the midpoint of $\overline{BC}$ and F the midpoint of $\overline{CD}$. What is the area of the quadrilateral ABEF?

a. 54 ½ sq cm b. 80 sq cm c. 62 ½ sq cm d. 50 sq cm

17. The difference between two numbers is 11, while the sum of the squares of these two numbers is 373. What is the product of the two numbers?

a. 126 b. 80 c. 121 d. 92

18. When the 101st even number is subtracted from the 122nd odd number, the result is a prime number. What is it?

a. 41 b. 53 c. 43 d. 59

19. Simplify: $4 - 36(6 \cdot 6 - 6) + 18 - 6(-1)$

a. -1088 b. -1052 c. -1205 d. -1024

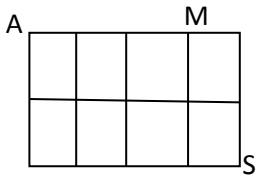
20. Jack stands on a math team table, and from a height of 12 feet drops a bouncy ball. Assuming it bounces straight up and down, and it rebounds $^{2}/_{3}$ of the distance it drops, how far will it have traveled when it hits the floor for the fourth time?

a. $^{1109}/_{81}$ b. $12\,^{2}/_{3}$ c. $^{1030}/_{27}$ d. $45\,^{7}/_{9}$

21. 30 bops = 15 dops. 6 dops = 8 jops. 2 jops = 6 lops. How many lops is 3 bops?

a. 8 b. 5 c. 6 d. 4

22. Addison lives at point A and walks to school along the paths given in the diagram to Simmons (point S) every day. He always walks the shortest path so he can get there in a hurry to sit down and read. What is the probability that he passes Michael's house (point M) on his walk?



a. $^{5}/_{7}$ b. $^{1}/_{15}$ c. $^{1}/_{5}$ d. $^{3}/_{7}$

23. Jessica starts reading ***The Number Devil*** and notices the first page of text (a right-hand page) is numbered 9 and the last page is numbered 255. She reads exactly one-third of the book when she lays it open side down to set the table for supper. What is the sum of the page numbers on the open pages?

a. 165 b. 166 c. 167 d. 168

24. What is the sum of the positive integral divisors of 210?

a. 211 b. 576 c. 452 d. 348

25. If six copiers were used to copy the 33000 sheets of paper needed for this tournament in 5 hours, how many hours would it take 12 copiers to copy 264000 sheets?

a. 5 hours b. 8 hours c. 16 hours d. 20 hours

Tiebreakers

1. Simplify and write in scientific notation:

$$\frac{(0.09 \times 10^5)(4{,}000{,}000)}{(2000)(0.000006)}$$

2. Find the sum of the series: 1 + 2 + 4 + 8 + . . . + 512.

3. How many distinct permutations are there for TOYSTORYTHREE ?