5th Grade Test

Randolph School Mathematics Tournament

April 24, 2010

1. 111 + 222 + 333 + 444 =
   A. 1000 B. 1010 C. 1110 D. 11,100

2. $10^3 + 10^2 + 10^1 + 10^0 =$
   A. 1000 B. 1010 C. 1110 D. 1111

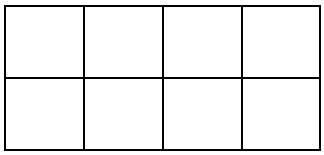
3. In a right triangle, the measure of one angle is 55°. The measure of the smallest angle of the triangle is
   A. 25° B. 35° C. 45° D. 90°

4. $\frac{1111}{11} =$
   A. 11 B. 100 C. 101 D. 111

5. 3% of 900 is
   A. 30 B. 27 C. 9 D. 3

6. A 2-pound pizza is cut into eight slices of equal weight. Find the weight in ounces of three slices.
   A. 4 B. 8 C. 9 D. 12

7. How many distinct squares are in the figure?

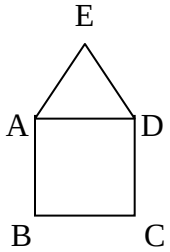


   A. 31 B. 11 C. 10 D. 8

8. $2 + 2 \times 2 - 2 =$
   A. 0 B. 2 C. 4 D. 6

9. Two sides of a triangle have lengths 16 and 18. The length of the remaining side cannot be
   A. 2 B. 3 C. 17 D. 18

10. An equilateral triangle and a square have a common side as shown. What is the degree measure of $\angle EAB$?
    A. 90 B. 120 C. 150 D. 160



11. $2^5 + 4^3 + 5^2 =$
    A. 11^{11} B. 11^{10} C. 11^5 D. 11^2

12. A worker's daily salary is increased from \$50 to \$70. What is the percent increase in her daily salary?
    A. 40% B. 20% C. 15% D. 10%

13. On a scale drawing, a line 5 cm long represents a distance of 40 meters. A line 6.75 cm long represents a distance of

A. 51 m B. 54 m C. 57 m D. 60 m

14. How long in minutes does it take a car to travel 20 miles at an average rate of 60 mph?

A. 20 B. 25 C. 30 D. 40

15. For a fundraiser, a math team buys pencils at 8 for 25¢ and sells them at 2 for 15¢. How many pencils should the team sell in order to make a profit of $35?

A. 100 B. 400 C. 800 D. 1000

16. One skip = 4 hops, and 1 jump = 2 skips. How many hops are all together in a hop, a skip, and a jump?

A. 13 B. 12 C. 8 D. 7

17. Tony has 99¢ in change. If he has the fewest possible coins, how many nickels does he have?

A. 0 B. 1 C. 2 D. 3

18. Three goats drink six gallons of water in one hour. At the same rate, how long should it take six goats to drink three gallons of water?

A. 15 minutes B. 30 minutes C. 1 hour D. 2 hours

19. A room is one-half full of people. After twenty people leave, the room is one-third full. How many people are in the room when it is full?

A. 60 B. 80 C. 90 D. 120

20. Solve for x. $\frac{1}{8}+\frac{3}{8}=\frac{1}{7}+\frac{x}{7}$

A. 2.5 B. 3 C. 3.5 D. 4

21. In every right triangle, two sides are

A. equal B. horizontal C. perpendicular D. vertical

22. $0.8\overline{)17.624} =$

A. 22.3 B. 2.203 C. 2.23 D. 22.03

23. 125% is the same as

A. $\frac{4}{5}$ B. $\frac{5}{4}$ C. $\frac{6}{5}$ D. 12.5

24. $\sqrt{9}+\sqrt{16} =$

A. $\sqrt{5}$ B. $\sqrt{7}$ C. $\sqrt{25}$ D. $\sqrt{49}$

25. How many positive integer divisors does 72 have?

A. 8 B. 12 C. 15 D. 16

26. What is the degree measure of the smaller angle formed by the hour and minute hands of a clock (with a circular face) at 11:00 AM?

A. 30 B. 48 C. 60 D. 120

27. Write $0.\overline{45}$ as a fraction in lowest terms.

A. $\frac{9}{20}$ B. $\frac{5}{11}$ C. $\frac{18}{25}$ D. $\frac{10}{22}$

28. The average of five numbers is 36. A sixth number is added to the sum of the other five so that the new average is 40. What was the sixth number?

A. 60 B. 58 C. 56 D. 54

29. Which of the following can be expressed both as the sum of two consecutive integers and the sum of three consecutive integers?

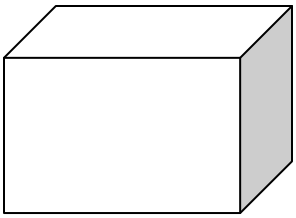
A. 25 B. 30 C. 43 D. 57

30. If q is any integer, which of the following must represent an odd integer?

A. $q + 1$ B. $q - 2$ C. $2q - 1$ D. $2q + 2$

TIE BREAKERS

1. Evaluate if $x = 3$. $\frac{3x^3 - 3x^2 - 3x}{3} + 3$



2. A wooden box is 10 inches long, 6 inches high, and 4 inches wide. How many blocks will it hold if each block is a cube that measures 2 inches on an edge?

3. A beetle begins its climb up a tree that is ninety-three feet tall. Starting at the bottom of the tree on the first day, the beetle climbs up eighteen feet each day and climbs down thirteen feet each night. If the beetle does not stop, on what day do its feet first reach the top?