

5th Grade Test
Randolph School Mathematics Tournament
April 25, 2009

1. What month will it be in 160 days from today?
A. September B. October C. November D. December
2. What is the sum of the thousandths digit and the hundreds digit of 32435.46576?
A. 9 B. 8 C. 7 D. 6
3. The sum of two consecutive even numbers is 46. What is the difference between the squares of these two numbers?
A. 576 B. 484 C. 92 D. 2
4. If $2x + 3y = 51$ and $3x + 2y = 74$, what is the value of $x + y$?
A. 9 B. 15 C. 21 D. 25
5. A class of 20 students is asked to select 2 students to represent them on the homecoming committee. How many different combinations of two students could be selected?
A. 200 B. 190 C. 15 D. 10

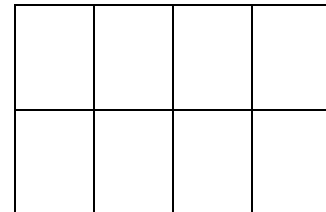
6. Evaluate if $x = 8$, $y = 12$, $z = \frac{1}{2}$, and $w = \frac{1}{3}$.

$$\frac{x}{z} + \frac{y}{w} - \frac{y}{z} + \frac{1}{w}$$

A. 31 B. 25 C. $2\bar{3}$ D. $1\bar{6}$

7. How many different rectangles are in the figure?

A. 8 B. 9 C. 28 D. 30



8. Solve for x .

$$\sqrt{x} - 5 = 4$$

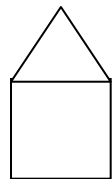
A. 3 B. 9 C. 36 D. 81

9. The diameters of two circles are 6 inches and 10 inches. How many inches are in the sum of the circumferences of the two circles?

A. 16π B. 32π C. 34π D. 136π

10. An equilateral triangle and a square have a common side. If the perimeter of the triangle is 105 units, then the area in square units of the square alone is

A. 140 B. 180 C. 1225 D. 2025

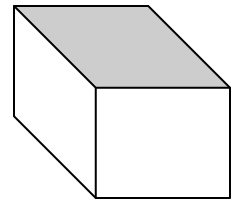


11. Find the sum of the squares of the first five non-negative integers.

A. 28 B. 30 C. 45 D. 55

12. A box is 8 inches high, 12 inches wide and 18 inches long. What is the total surface area in square inches?

A. 1728 B. 1368 C. 912 D. 456



13. A square has an area of 324 square inches. What is the perimeter of the square in inches?

A. 36 B. 72 C. 96 D. 144

14. Evaluate. $2^5 - 2^4 + 2^3 - 2^2$

A. 36 B. 20 C. 13 D. 4

15. Scores on a math test were 97, 95, 82, 79, 98, 95, 88, 86, and 92. What is the sum of the median and mode of the scores?

A. 193 B. 190 C. 187 D. 177

16. If 20% of 25% of a number is 30, then the number is

A. 750 B. 720 C. 620 D. 600

17. A rhombus has the same number of angles as a

A. trapezoid B. pentagon C. hexagon D. octagon

18. The sum of the ages of Paris, Brittany and Lindsey is 72. What will be the sum of their ages five years from now?

A. 77 B. 82 C. 87 D. 92

19. Solve for x . $7x^3 - 3 = 186$

A. 3 B. 4 C. 6 D. 9

20. If $p \uparrow q = pq - 2p$, find $5 \uparrow 6$.

A. 1 B. 4 C. 20 D. 30

21. Find the area of a triangle with base 31 and height 16.

A. 124 B. 248 C. 496 D. 1240

22. How many pairs of parallel sides does a regular pentagon have?

A. 0 B. 2 C. 3 D. 4

23. Betina traveled 24 miles by car in 40 minutes, and then traveled 156 miles by bus in two hours and 20 minutes. At what average rate in miles per hour did she travel for the entire trip?

A. 45 B. 50 C. 55 D. 60

24. Find the next number in the sequence of numbers.

225, 256, 289, _____

A. 322 B. 324 C. 326 D. 330

25. How many positive integer divisors does 144 have?

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

26. Simplify: $\frac{\frac{4}{3} + \frac{3}{4}}{\frac{5^2}{16}}$

A. $\frac{3}{4}$

B. $\frac{3}{5}$

C. $\frac{7}{12}$

D. $\frac{4}{3}$

27. Three fair coins are tossed. What is the probability that at least two coins land heads up?

A. $\frac{1}{2}$

B. $\frac{2}{3}$

C. $\frac{3}{4}$

D. $\frac{3}{8}$

28. Write $0.\overline{72}$ as a fraction in lowest terms.

A. $\frac{33}{52}$

B. $\frac{24}{33}$

C. $\frac{18}{25}$

D. $\frac{8}{11}$

29. What is the degree measure of the smallest angle formed by the hour and minute hands of a clock (with a circular face) at 10:00 AM?

A. 120

B. 60

C. 48

D. 20



30. The average of six numbers is 35. A seventh number is added so that the new average is 39. What was the seventh number?

A. 63

B. 49

C. 28

D. 4

TIE BREAKERS

1. How many three-digit even numbers are greater than 827?

2. If m and n are positive consecutive even integers, find $m + n$ if $m < \sqrt{2009} < n$.

3. Evaluate: $\frac{2^{2009}}{-2^{2000}}$