5th Grade Test

Raider Math Challenge

April 19, 2014

1. Evaluate. $4 \cdot 5 \div \frac{2}{4} + \frac{4^2}{8} - 14 + 2(\frac{12}{3} - 1)$

   A. 4 B. 34 C. 4 D. 14

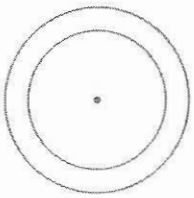
2. Give the next number in the sequence. 1, 7, 19, 43, 91…

   A. 97 B. 182 C. 187 D. 200

3. Solve for x. $4(3x + 9) = 8(2x+4)$

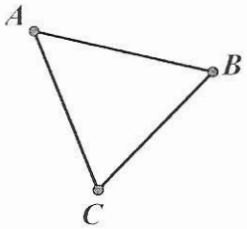
   A. -1 B. 1 C. -3 D. 4

4. The ratio of the circumferences of the two inscribed circles is 4:3. If the radius of the outside circle is 16, what is the radius of the inner circle?



   A. 8 inches B. 16 inches C. 4 inches D. 24 inches

5. If the $m\angle A = 63^\circ$ and $m\angle B = 70^\circ$, then $m\angle C = ?$



   A. 37° B. 21° C. 41° D. 47°

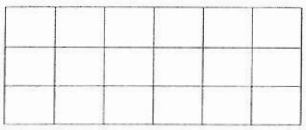
6. Graduation is on May 23, 2014. If today is April 19, 2014, in how many days is graduation?

   A. 36 B. 37 C. 34 D. 4

7. There are 17 knuts in 221 sickles, and 13 sickles in 273 galleons. If Ginny Weasley has 1300 knuts, how many galleons does she have?

   A. 354900 galleons B. 2100 galleons C. $4\frac{16}{21}$ galleons D. $\frac{21}{100}$ galleons

8. Count the total number of squares in the diagram at the right.



A. 18 B. 28 C. 22 D. 32

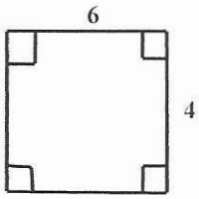
9. If you roll a pair of six-sided fair dice, what is the probability of rolling a sum of 4?

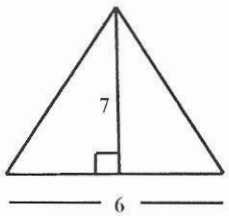
A. $\frac{1}{2}$ B. $\frac{1}{9}$ C. $\frac{1}{12}$ D. $\frac{1}{18}$

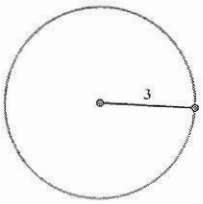
10. Evaluate $\left((5+3)^2\right)^0$

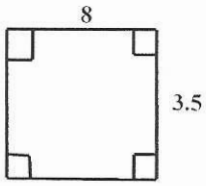
A. 64 B. 34 C. 1 D. 0

11. Which figure has the greatest area? Assume that pi is approximately 3.14.

A. 

B. 

C. 

D. 

12. Tim has some coins that have a total value of \$1.35. If Tim has some quarters, nickels and dimes, what is the least total value of the pennies?

A. 1 cent B. 0 cents C. 3 cents D. 5 cents

13. If Roger goes to sleep at exactly 8:35 pm and wakes up at exactly 7:23 am, how long does Roger sleep?

A. 10 hours and 48 minutes B. 11 hours and 48 minutes C. 655 minutes D. 642 minutes

14. If the diameter of a circle is 18 feet, what is its' circumference.

A. 324π inches B. 216π inches C. 36π inches D. 18π inches

15. Simplify $(36x+13y)-3(2x-y)$

A. 42x + 16y B. 30x + 16y C. 30x + 10y D. 10x + 3y

16. Stuart Little embarks on an epic journey. He drives half-way to his destination which takes 3 hours. At the half way point, he leaves his fuel deprived car and begins pedaling his spare unicycle. It takes him 4 hours to reach his destination from the midpoint of the journey. What is the ratio of his rate for the second part of the trip to his rate for the first part of the trip?

A. 4:3 B. 1:2 C. 2:1 D. 3:4

17. The sum of the reciprocal of x and $\frac{1}{2}$ is 1. Find the value of x.

A. 1 B. -1 C. 2 D.

18. There are 50 students in Algebra, 60 students in Geometry and 40 students in Number Theory. No student is allowed to take all three courses. If there are 20 in Algebra and Geometry, 15 in Algebra and Number Theory and 10 in Geometry and Number Theory, how many total students are there?

A. 150 B. 105 C. 90 D. 75

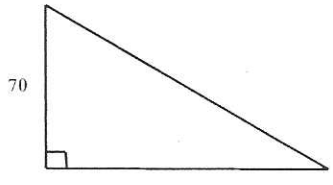
19. Find the sum of the values of x such that $x^2 = 2$.

A. 1 B. 0 C. 2 D. 4

20. What is 15% of 80% of 200?

A. 12 B. 36 C. 24 D. 50

21. What is the perimeter of the shape shown below if the area of the shape is exactly 1750.



A. 300 **B.** 600 C. 100 D. 500

22. If two twenty-sided dice are rolled, what is the probability that the product of the two numbers showing will be a prime number?

A. $\frac{7}{200}$ B. 0 C. $\frac{3}{80}$ D. $\frac{1}{2}$

23. Farmer Brown has 48 feet of fencing. What are the dimensions which will give the cows the most grass to graze inside the fencing?

A. 15×11 B. 12×12 C. 10×14 D. 2×22

24. Mohammed is older than Omer by 7 years. Roscoe is younger than Mohammed by 9 years. Dikembe's age is the average of the ages of Omer and Roscoe. Dikembe's twin, Eddie, is 15. How old is Roscoe?

A. 12 B. 14 C. 23 D. 19

25. There are 6 students going to the movies. Two of them are siblings and they do not want to sit next to each other. How many ways can this occur?

A. 240 B. 720 C. 600 D. 480

TB1. In the multiplication problem below, A and B stand for different digits. What is the sum of A and B?

$$\begin{array}{r} AB \\ \times BA \\ \hline 372 \\ 124 \\ \hline 1612 \end{array}$$

TB2. Elsa can make 1' x 1'x 1' ice blocks at a rate of 2.5 blocks minute. If she builds a tower that is made entirely from ice blocks and the volume of the tower is 1750 cubic feet, how long did it take her to build the blocks for the tower?

TB3. What is the sum of all of the prime factors of 2014?