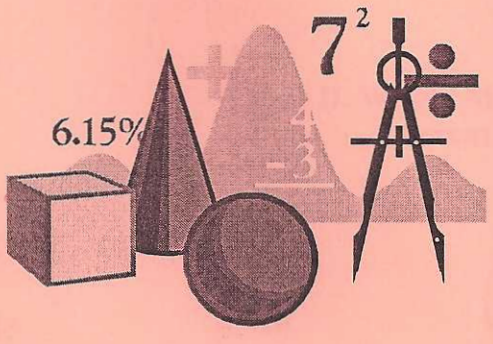

7th Grade

2015 Cindy D. Wright Mathematics Tournament presented by Pizitz Middle School

7th Grade Written Test

Directions:

1. Do not open this test until you are told to do so by the proctor.
2. 60 minutes will be allowed for completing this test. The proctor will keep time. Students must stay in the testing room for the full 60 minutes. Anyone leaving the testing room for an emergency must turn in their test and scantron answer sheet and not return.
3. Use a #2 lead pencil.
4. No calculators, books, notes, or other aides may be used. If your watch has a calculator, please remove your watch now. Cell phones must be turned off.
5. Scratch paper will be provided; you may not furnish your own. If you need more scratch paper during the test, raise your hand, and your proctor will bring it to you. You may write on your test.
6. You will receive four points for each correct answer and have one point deducted for each incorrect answer. An answer left blank will not change the score.
7. There are three tiebreakers at the end of the test. Write your name, your school name, grade, and tiebreakers answers in the top margin on the back of your scantron. If the tiebreakers do not break a tie, then the test will be scored backwards, with the first person to not answer a question correctly being given the lower place.
   Please write your name, school, and TB1, TB2, and TB3 on the back of your scantron answer sheet now.
8. Please give your scantron answer sheet to the proctor before leaving the testing room. You may keep your copy of the test. Answer Keys will be posted in the corner areas on each floor and in the cafeteria.

Good Luck!

Cindy D. Wright Mathematics Tournament 2015
Seventh Grade Written

1. Simplify. $9 + 7\,[8 - 2^3] - 8$

A. 15 B. -8 C. 9 D. 1 E. NOTA

2. Solve. $\sqrt{9^2 + 12^2 + 8^2}$

A. 17 B. 13 C. 15 D. $12\sqrt{3}$ E. NOTA

3. If $a@b = 3a - 2b$, find $2@(4@3)$.

A. 0 B. 6 C. -9 D. -6 E. NOTA

4. Find $\frac{2}{7}$ of 40 % of 665.

A. 30.4 B. 7.6 C. 15.2 D. 76 E. NOTA

5. Solve for x. $2(3x - 7) + 1 \leq 5(x + 1) - 9$

A. $x \leq 9$ B. $x \leq -17$ C. $x \leq -9$ D. $x \leq 17$ E. NOTA

6. What number added to $4\frac{1}{4}$ yields the same result as the product of $\frac{7}{15}$ and $7\frac{1}{2}$?

A. 0.75 B. $\frac{4}{3}$ C. $-\frac{3}{4}$ D. 1.3 E. NOTA

7. What is the unit rate for 612 miles in 12 hours?

A. 51 mph B. 29 mph C. 7344 mph D. 306 mph

8. Which expression is equivalent to seven less than four times a number?

A. $7 - 4n$ B. $4n - 7$ C. $4 - 7n$ D. $7 + 4n$ E. NOTA

9. The angles of a triangle are in the ratio $2 : 5 : 8$. What is the reciprocal of the largest angle?

A. 12 B. $\frac{1}{12}$ C. 96 D. $\frac{1}{96}$ E. NOTA

10. Solve. $x^3 = 64$

A. 2 B. 12 C. -2 D. 4 E. NOTA

11. The perimeter of a rectangle is $12x + 8$. One side of rectangle is $x + 2$. What is the length of the other side?

A. $11x + 6$ B. $5x + 2$ C. $10x + 4$ D. $3x + 2$ E. NOTA

12. When all of the positive integral factors of 40 are multiplied together, the product is 40^k. What is the value of k?

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

13. It takes 7 hours for 7 pirates to sink 7 ships. How long will it take 8 pirates to sink 8 ships?

A. 7 hours B. 8 hours C. 560 minutes D. 320 minutes E. NOTA

14. The odds in favor of Harry Potter defeating Voldemort are 3: 7. What is the probability that Harry will be defeated?

A. 3 : 7 B. 3 : 10 C. 7 : 3 D. 7 : 10 E. NOTA

15. Two buses leave Birmingham at the same time. One is traveling north and the other south. The northbound bus travels 15 mph faster than the southbound bus. After 3 hours of travel, the buses are 255 miles apart. What is the positive difference of their speeds?

A. 35 mph B. 50 mph C. 20 mph D. 15 mph E. NOTA

16. Solve for x: $\frac{2}{3}(24x - 36) = 8$

A. -2 B. $\frac{11}{6}$ C. $-\frac{11}{6}$ D. 2 E. NOTA

17. Find the range of three consecutive even integers whose sum is 162.

A. 54 B. 0 C. 4 D. none E. NOTA

18. Find the sum of the x and y intercepts of $18x + 7y = 9$.

A. $\frac{9}{14}$ B. $\frac{25}{14}$ C. $\frac{11}{14}$ D. $\frac{93}{126}$ E. NOTA

19. Write the equation of the line in slope intercept form. $\frac{3}{5}x - 4y = -20$

A. $y = \frac{7}{20}x + 15$ B. $y = \frac{3}{20}x + 5$ C. $-2y = -x - 10$ D. $y = -\frac{7}{20}x + 5$ E. NOTA

20. What is the smallest positive integer that has exactly 10 factors?

A. 48 B. 500 C. 12 D. 8 E. NOTA

21. A goblin miner earns 1 cent the first day, 2 cents the second day, 4 cents the third day, 8 cents the fourth day. If the goblin works 15 days, how much will he earn?

A. \$32,768 B. \$327.67 C. \$327.68 D. \$ 32,767 E. NOTA

22. $A = \{2, 3, 5, 11\}$, $B = \{2, 4, 6, 8\}$, and $C = \{1, 3, 5, 7\}$ Find $A \cap (B \cup C)$.

A. $\{2, 4, 5, 7\}$ B. $\{2, 3, 5, 11\}$ C. $\{2, 3, 5\}$ D.$\{3, 5, 7\}$ E. NOTA

23. The Pizitz math team is competing in a 3-on-3 basketball tournament. How many different basketball teams can be formed from the 15 member math team?

A. 268 B. 455 C. 720 D. 217,000 E. NOTA

24. The denominator of a fraction is seven more than the numerator. If five is added to both the numerator and the denominator, the resulting fraction is $\frac{1}{2}$. Find the original fraction.

A. $\frac{12}{5}$ B. $\frac{9}{2}$ C. $\frac{5}{12}$ D. $\frac{2}{9}$ E. NOTA

25. Find the reciprocal of the positive difference between the interior and exterior angle of a regular octagon.

A. 135 B. -90 C. $\frac{1}{90}$ D. $\frac{1}{135}$ E. NOTA

Tiebreakers ***Please write tiebreaker answers in the top margin on the back of the scantron.***

TB1. Simplify: $\dfrac{\frac{2}{a+1} - 2}{\frac{2-a}{a^2-1} - 2}$

TB2. $213_6 - 144_6$ Give your answer in base six.

TB3. The hypotenuse of an isosceles right triangle has a length of x. What is the area of the triangle in terms of x ?