Name: _____

School: _____

Grade: 3rd 4th 5th

Elementary General Math #6

2014-2015

General Directions

This test will last for 40 minutes. There are 50 problems on the test.

Write all answers on your answer sheet.

Always use capital letters on your answer sheet.

You may write on the test and show work on the test. You are not required to show any of your work or calculations.

You may skip around on the test. All problems have only one correct answer.

Calculators may NOT be used on this test.

Scoring: All problems correctly answered are worth 5 points. Two points will be subtracted for all problems answered incorrectly. No points are subtracted for problems that are skipped.

Tiebreakers: (1) Percent accuracy (2) First problem missed (not counting skips).

Elementary Math Test #6

General Math Test – 3rd, 4th and 5th Grade

Choose the letter of the correct answer. You may skip around on this test.

1. Mathcounts is the name of a national math competition in the United States. In a Mathcounts competition, each student takes a sprint round and a target round. A student receives one point for each correct answer on the sprint round and receives two points for each correct answer on the target round. There are 30 questions on the sprint round and 8 questions on the target round. What is a perfect score on this part of the competition?

   A. 30 B. 16 C. 38 D. 46 E. 100

2. 23 + 73 – 11 + 23 – 73 = _____

   A. 35 B. 108 C. 85 D. 15 E. 45

3. What is the largest prime factor of 429?

   A. 143 B. 11 C. 13 D. 43 E. 2

4. Solve for J in the equation: 5J – 18 – 63 = 4J

   A. 9 B. 5 C. 36 D. 81 E. 90

5. What is the largest prime number from these choices?
   A. 91 B. 89 C. 79 D. 117 E. 88

6. The calculator test is one event in a standard TMSCA contest. Each correct question on a calculator test earns five points for the contestant. There are 80 questions on the calculator test. What is a perfect score on the calculator test?

   A. 85 B. 100 C. 400 D. 250 E. 200

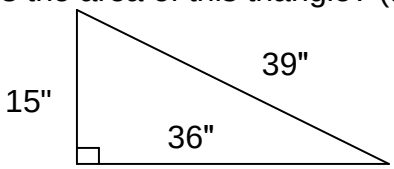
7. A solid with 4 faces is called a(an):

   A. hexahedron B. tetrahedron C. octahedron D. square E. octagon

8. In the first 3 games of Rylie's soccer season, she played 28 minutes, 30 minutes and 29 minutes. How many total minutes did she play in the 3 games?

   A. 87 B. 88 C. 97 D. 78 E. 7

9. What is the area of this triangle? (to the nearest integer)



A. 540 in² B. 90 in² C. 702 in² D. 270 in² E. 587.5 in²

10. How many prime numbers are between 2 and 113?

A. 28 B. 27 C. 29 D. 26 E. 30

11. Hailey rolled two dice. The sum of the numbers on the top of the two dice was two. She decided to perform an experiment to see how many sums of 9 she could roll in 50 throws. What was the theoretical probability that she would obtain a sum of 9 on her final roll?

A. $\frac{7}{9}$ B. $\frac{1}{6}$ C. $\frac{1}{9}$ D. $\frac{1}{18}$ E. $\frac{5}{12}$

12. Ella collected coins for 5 weeks for a math project. In the 5 weeks, she calculated the monetary value of her coins each week. The values by week were $4.25, $3.57, $2.65, $3.27, and $4.56, respectively. What was the total value of the 5-week collection?

A. $18.20 B. $18.30 C. $18.40 D. $18.50 E. $18.10

13. What is the difference of 682,392 and 68,395?

A. 613,797 B. 613,577 C. 613,997 D. 613,987 E. 614,007

14. What is the value of 8 quarters, 6 dimes, and 30 nickels?

A. $5.10 B. $3.10 C. $1.70 D. $5.60 E. $4.10

15. What is the sum of the factors of 3,030?

A. 7344 B. 7142 C. 6839 D. 4313 E. 6733

16. What is the name of a polygon with exactly 12 sides and twelve interior angles?

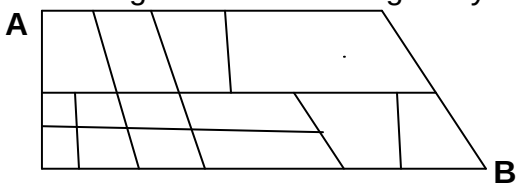
A. heptagon B. decagon C. hexagon D. dodecagon E. pentagon

17. Which value is the reciprocal of $\frac{185}{999}$?

A. 2.75 B. 5.2 C. 5.4 D. 5.27 E. 5.25

18. What is the units digit of 6^{403}?
A. 2 B. 3 C. 6 D. 8 E. 4

19. How many paths exist from top corner A to bottom corner B? You may only move to the right or down or diagonally down. A. 32 B. 30 C. 34 D. 29 E. 35



20. Roger Maris was a great baseball player who played for the New York Yankees, Cleveland Indians, Kansas City Athletics and St. Louis Cardinals. In 1961, he broke Babe Ruth's home run record by hitting 61 home runs in one season. Babe Ruth had hit 60 home runs in 1927. How many years did Ruth's record last before it was broken by Roger Maris?

A. 45 B. 44 C. 24 D. 34 E. 36

21. How many distinct integral factors does 720 have? (Hint: The factors of 12 are 1, 2, 3, 4, 6, and 12.)
A. 30 B. 32 C. 28 D. 26 E. 24

22. How many proper subsets does set T have? Set T = {2,®,☼,♥,◘}.
A. 32 B. 16 C. 31 D. 15 E. 63

23. The quotient of nine hundred ninety and thirty three is:
A. 1023 B. 30 C. 32670 D. 957 E. 33

24. Trigonometry is based on the geometry of triangles. Three trig ratios are sine, cosine, and tangent. Which fraction below refers to the tangent ratio?
A. $\frac{A}{O}$ B. $\frac{A}{H}$ C. $\frac{O}{H}$ D. $\frac{O}{A}$ E. $\frac{H}{A}$

25. What is the sum of the median and mean of 12, 24, 32, 75, 30, 4, 6, 7, 8, and 2?
A. 28 B. 26 C. 27 D. 30 E. 50

26. What is the product of the digits of 712,845,613,704?
A. 1128960 B. 48 C. 1128940 D. 1128860 E. 0

27. What is the mode of 16, 95, 84, 16, 84, 48, 314, 56, 4, and 16?
A. 16 B. 70 C. 73.3 D. 73.2 E. 84 and 16

28. If Y ♥ W= (3W + 4Y) + 3(5Y + 2W), then what is the value of 6 ♥ 3?
A. 138 B. 141 C. 108 D. 216 E. 324

29. What is the sum of 494 and 503?
A. 987 B. 997 C. 1000 D. 1007 E. 1997

30. What is the product of 18 and 32?
A. 676 B. 566 C.576 D. 586 E. 476

31. What is the area of a rectangle with a length of 32 and a width of 18?

A. 100 B. 50 C. 576 D. 566 E. 546

32. The greatest common factor of 2040 and 964 is:
A. 241 B. 2 C. 1 D. 4 E. 491640

33. Ayden loves math. One day, he wrote the first 16 rows of Pascal's triangle in his notebook. Knowing that the top row is called row zero, he decided to add the numbers in each row. What was the sum of the numbers in rows 8 and 15?

A. 33,022 B. 33,124 C. 33,024 D. 34,024 E. 32,024

34. How many numbers between 47 and 112 are composite?

A. 50 B. 49 C. 15 D. 51 E. 48

35. How many sides does an octagon have?

A. 10 B. 11 C. 12 D. 14 E. 8

36. 84750.9 hm = _____ cm
A. 847509000 B. 8475.09 C. 84.7509 D. 8.47509 E. 0.847509

37. The intersection of the medians of any triangle is the:
A. incenter B. circumcenter C. orthocenter D. coordinate E. centroid

38. What is the total sum of the degrees of all of the exterior angles in one regular dodecagon?
A. 900 B. 720 C. 1800 D. 360 E. 1080

39. How many distinct arrangements of the word CLASSES are possible? (Hint: The arrangement does not have to spell a correct word. CASSELS would count as an arrangement.)

A. 5,040 B. 2,620 C. 840 D. 1,680 E. 56

40. Which of these angle measures would be classified as obtuse?

A. 87 B. 102 C. 11 D. 90 E. 195

41. The time 68.5 hours past 2:02 pm would be:

A. 10:32 pm B. 10:07 am C. 10:17 am D. 9:32 am E. 10:32 am

42. The longest side of a right triangle is called the _____.
A. opposition B. tangent C. adjacent D. coordinate E. hypotenuse

43. The product of the Roman numeral XLI and XCI is:
A. MMDCCXXI B. MMMDCCCXI C. MMMDCCXXXI D. MDXI E. MMCCCDL

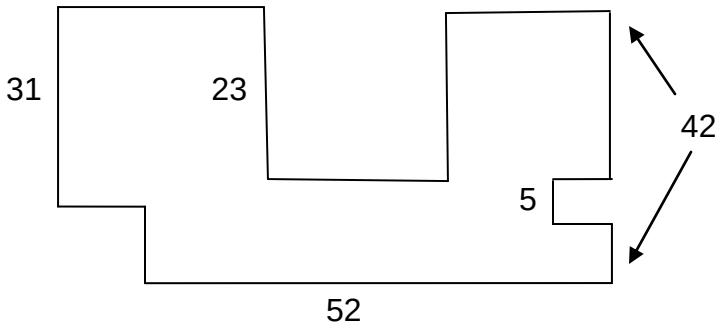
44. What is the prime factorization of 360?
A. $2^4 \times 3^2 \times 5$ B. $2^3 \times 3^2 \times 5^2$ C. $2^3 \times 3^2 \times 5$ D. $2^4 \times 3^2 \times 5^2$ E. $2^4 \times 3^2 \times 5^3$

45. What is the area in square inches of a rectangle with a width of 24 in. and a length that is equal to twice the width?
A. 576 B. 1152 C. 288 D. 144 E. 72

46. What is the square root of 5,184 rounded to the nearest tenth?
A. 72.3 B. 70.2 C. 72 D. 74 E. 71.2

47. Find the product of 88 and 89.
A. 7,832 B. 7,842 C. 7,822 D. 7,872 E. 8,842

48. Find the area of this figure. The figure represents a rectangle with 3 squares missing.



A. 2,646 B. 2,092 C. 1,927 D. 1,971 E. 2,067

49. What is the sum of the integral factors of 720?
A. 1,170 B. 2,417 C. 1,171 D. 2,418 E. 2,336

50. What is the diameter of a circle that has an area of 576π?

A. 48 B. 96 C. 288 D. 24 E. 36