Kansas City Area Teachers of Mathematics
2012 KCATM Math Competition

NUMBER SENSE
GRADE 4

NO CALCULATOR

<u>INSTRUCTIONS</u>

- **Do not open this booklet** until instructed to do so.

- Time limit: **15 minutes**

- You **may NOT use calculators** on this test.

- Some multiple-choice questions do not have the correct answer as one of the choices. On those questions, the response is   E. None of the above
    i.e.   3 + 4 =   A. 4   B. 5   C. 6   D. 8   E. Not given

- If a division problem has a remainder (for instance 21 ÷ 5 = ??), the answer is in this form: **4 r 1**

- All fractions are expressed in lowest terms.

- All answers that are improper fractions are written as mixed numerals or whole numbers.
    i.e. $\frac{4}{2}$ should be written as 2

    $\frac{7}{3}$ should be written as $2\frac{1}{3}$

Student Name _____ Student Number _____

School _____

1. What is the **mode** of the following numbers: 4,3,6,7,7,8,12,11,9,5,4,7,11
    A. 4   B. 7   C. 11   D. 12   E. None of the above

2. What is the **range** of the numbers: 4,3,6,7,7,8,12,11,9,5,4,7,11
    A. 8   B. 9   C. 10   D. 11   E. None of the above

3. What is the **mean** of the numbers: 3, 5, 10, 3, 4?
    1. 3   B. 4   C. 5   D. 6   E. None of the above

4. What is the **median** of the numbers: 3, 3, 4, 5, 10?
    A. 3   B. 4   C. 5   D. 10   E. None of the above

5. What number is in the **hundreds place** of the number: 4,367
    A. 7   B. 6   C. 3   D. 4   E. None of the above

6. Which number is represented by the expanded form: thirty-five thousand, two hundred twelve?
    A. 35,202   B. 35,112   C. 35,102   D. 35,212   E. None of the above

7. Which number is represented by the expanded form: nineteen hundredths
    A. 1900   B. 1.9   C. 0.019   D. 0.19   E. None of the above

8. Which numerical expression is equal in value to 1000 + 300+ 40 + 7?
    A. 1300 + 47   B.   1040 + 37   C. 1047 + 30   D. 1007 + 34
    E. None of the above

9. If you are nine years old and your mother was twenty-seven when you were born, how old is your mother now?
    A. 18   B. 25   C. 36   D. 37   E. None of the above

10. What values can you have in the ones digit if you multiply any number by 5?
    A. 0, 2   B. 0, 5   C. 2, 3   D. 8, 9   E. None of the above

11. What is the length of a rectangle when the area is 36 sq. cm and the width of the rectangle is 9 cm?
    A. 3cm   B. 4cm   C. 5cm   D. 10cm   E. None of the above

12. Which of the following always results in an odd number?
    A. odd + odd   B. even + even   C. odd x odd
    D. even x odd   E. None of the above

Perform the operations:

13. 19 + 7   A. 25   B. 26   C. 27   D. 28   E. None of the above

14. 345 + 55   A. 395   B.400   C. 405   D. 410   E. None of the above

15. 11 x 11   A. 111   B. 110   C. 121   D. 122   E. None of the above

16. 298 ÷ 2   A. 144   B. 154   C. 159   D. 149   E. None of the above

17. 83 – 15   A. 64   B. 67   C. 69   D. 72   E. None of the above

18. 4,000 – 199   A. 3,801   B. 3,911   C. 4,199   D. 3,899   E. None of the above

19. ¼ + ¾   A. 1   B. 2/4   C. 4/8   D. 3/4   E. None of the above

20. 2 ½ + 3 + 1 ½   A. 6 ½   B. 7   C. 7 ½   D. 8   E. None of the above

21. 5 2/3 – 1 1/3   A. 3 1/3   B. 4 1/3   C. 4 1/6   D. 3 1/6   E. None of the above

22. ½ x ½   A. 1   B. ½   C. ¼   D. ¾   E. None of the above

23. 72 ÷ 8   A. 6   B. 7   C. 8   D. 9   E. None of the above

24. 14 + 18 + 6   A. 32   B. 38   C. 36   D. 34   E. None of the above

25. 2 x (5 + 7)   A. 19   B. 17   C. 14   D. 24   E. None of the above

26. 14+(11 – 2)÷3   A. 7 r 2   B. 11   C. 17   D. 10 r 2   E. None of the above

27. 71 ÷ 5   A. 14 r 1   B. 13 r 4   C. 14 r 3   D. 13 r 1   E. None of the above

28. 1,000 ÷ 25   A. 8   B. 40   C. 25   D. 32   E. None of the above

29. $\left(\dfrac{3}{4}\right)\times 8$ A. 24/32   B. 3/8   C. 7   D. 6   E. None of the above

30. 254 + 29 + 311   A. 594   B. 693   C. 614   D. 584   E. None of the above

31. $9.54 + $2.75   A. $11.99   B. $12.29   C.$12.21   D. $12.09
                   E. None of the above

32. How much money do you have left if you give the sales clerk $10 to cover the cost of a box of crackers for $2.15, a block of jalapeno cheese for $2.38, and a drink for $1.39 and 9% tax of $0.60.
   A. $2.84   B. $3.48   C. $4.88   D. $2.72   E. None of the above

33. I am thinking of a prime number between 1 and 100. The sum of its digits is 10 and the difference of its digits is 4.
   A. 28   B. 37   C. 19   D. 95   E. None of the above

For question #34, there are four problems that have been worked. One of the problems on each question has an incorrect answer. Identify the problem that has the incorrect answer. *Hint:* Use estimation to quickly **identify the incorrect answer**.

34.   A.   534,875   B.   31,164   C.   89   D. 465 ÷ 4 = 116 r 1
            25,125   - 25,847   x 27
        + 61,059   6,327   2,403   E. None of the above
          621,059

35.   Find the missing digits A, B, C, and D in the problem:
      a 3 5   A.   a = 2, b = 4, c = 7, d = 1
      8 **b** 6   B.   a = 4, b = 5, c = 7, d = 2
   +   1 4 **c**   C.   a = 5, b = 3, c = 7, d = 1
      d 4 0 8   D.   a = 4, b = 2, c = 7, d = 1
                            E.   None of the above

36.   Find the value: n^2 when   n = -5
     A. -7   B. 10   C. 25   D. -10   E. None of the above

Determine the closest estimate for problems 37- 40.
37. 4.9 x 230   A. 1150   B. 1000   C. 1100   D. 1050

38. 502 ÷ 10   A. 44   B. 48   C. 49   D. 50

39. $\left(9\frac{7}{8}\right)+\left(8\frac{1}{12}\right)-\left(2\frac{9}{10}\right)$ A. 14   B. 15   C. 16   D. 19

40. What is the approximate cost of 15 gallons of gas at $2.99 per gallon?
        A. $44   B. $45   C. $46   D. $50

Shade the correct answer!
Example: A ● C D E

Name_____

School _____

1.	A	B	C	D	E	21.	A	B	C	D	E
2.	A	B	C	D	E	22.	A	B	C	D	E
3.	A	B	C	D	E	23.	A	B	C	D	E
4.	A	B	C	D	E	24.	A	B	C	D	E
5.	A	B	C	D	E	25.	A	B	C	D	E
6.	A	B	C	D	E	26.	A	B	C	D	E
7.	A	B	C	D	E	27.	A	B	C	D	E
8.	A	B	C	D	E	28.	A	B	C	D	E
9.	A	B	C	D	E	29.	A	B	C	D	E
10.	A	B	C	D	E	30.	A	B	C	D	E
11.	A	B	C	D	E	31.	A	B	C	D	E
12.	A	B	C	D	E	32.	A	B	C	D	E
13.	A	B	C	D	E	33.	A	B	C	D	E
14.	A	B	C	D	E	34.	A	B	C	D	E
15.	A	B	C	D	E	35.	A	B	C	D	E
16.	A	B	C	D	E	36.	A	B	C	D	E
17.	A	B	C	D	E	37.	A	B	C	D	E
18.	A	B	C	D	E	38.	A	B	C	D	E
19.	A	B	C	D	E	39.	A	B	C	D	E
20.	A	B	C	D	E	40.	A	B	C	D	E

Shade the correct answer!
Example: A   ●   C   D   E

Name_____

School _____

ANSWER KEY

1.	A	●	C	D	E		21.	A	●	C	D	E
2.	A	●	C	D	E		22.	A	B	●	D	E
3.	A	B	●	D	E		23.	A	B	C	●	E
4.	A	●	C	D	E		24.	A	●	C	D	E
5.	A	B	●	D	E		25.	A	B	C	●	E
6.	A	B	C	●	E		26.	A	B	●	D	E
7.	A	B	C	●	E		27.	●	B	C	D	E
8.	●	B	C	D	E		28.	A	●	C	D	E
9.	A	B	●	D	E		29.	A	B	C	●	E
10.	A	●	C	D	E		30.	●	B	C	D	E
11.	A	●	C	D	E		31.	A	●	C	D	E
12.	A	B	●	D	E		32.	A	●	C	D	E
13.	A	●	C	D	E		33.	A	●	C	D	E
14.	A	●	C	D	E		34.	A	●	C	D	E
15.	A	B	●	D	E		35.	A	B	C	●	E
16.	A	B	C	●	E		36.	A	B	●	D	E
17.	A	B	C	D	●		37.	●	B	C	D	E
18.	●	B	C	D	E		38.	A	B	C	●	E
19.	●	B	C	D	E		39.	A	●	C	D	E
20.	A	●	C	D	E		40.	A	●	C	D	E