Kansas City Area Teachers of Mathematics
2012 KCATM Math Competition

NUMBER SENSE
# GRADE 5

NO CALCULATOR

INSTRUCTIONS

- **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) not given
    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.** The answer may also be a decimal value.

- 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. Which number is missing from the sum: 234 + _____ = 344?
   A. 100   B. 110   C. 120   D. 90   E. None of the above

2. Kelsey is considering buying an HDTV for $450. The store is advertising their current sale: 10% off the listed price. How much would the discount be on this TV?
   A. $10   B. $40   C. $50   D. $45   E. None of the above

3. What fractional part is shaded in the hundreds chart below?

   A. 1/5

   B. 19/50

   C. 4/5

   D. 9/25
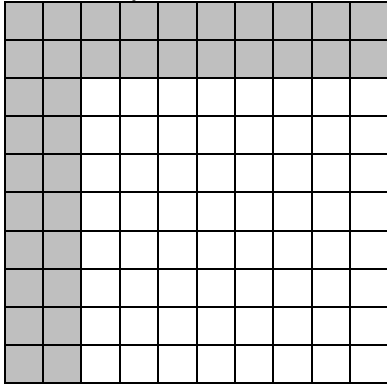
   E. None of the above

4. In the decimal number: 3.475, what is the sum of the tenths place and the thousandths place?
   A. 8   B. 10   C. 9   D. 8   E. None of the above

5. What would 7.83 be multiplied by if the value is changed to 7,830?
   A. 10   B. 100   C. 1,000   D. 10,000   E. None of the above

6. Estimate the sum by rounding the numbers to the nearest thousand and then adding:
   $$2,345 + 5,675 + 3,499$$

   A. 11,000   B. 12,000   C. 10,000   D. 14,000   E. None of the above

7. The number written as: 4 x 1000 + 5 x 10 + 7 x 1 is represented by:
   A. 457   B. 4,570   C. 40,057   D. 4,075   E. None of the above

8. Eight ten thousands is how many tens?
   A. 8   B. 800   C. 8,000   D. 80,000   E. None of the above

9. The number: 234 is **NOT** divisible by:
   A. 2   B. 3   C. 4   D. 6   E. None of the above

10. Which number has the smallest value:
    A. 2   B. -2   C. 1/2   D. -1/2   E. None of the above

11. Given the following Roman numeral values, what is the Roman numeral for: **798**?

I	V	X	L	C	D	M
1	5	10	50	100	500	1,000

   A. DCCCXIIX
   B. DCCXCVIII
   C. DCCCXVIII
   D. CCCCCCCXCIIIV
   E. None of the above

12. **73 x 99 =**   A. 7227   B. 7267   C. 7297   D. 7237   E. None of the above

13. **1.35 ÷ 5 =**   A. 2.7   B. 27   C. 0.27   D. 0.027   E. None of the above

14. **1.23 + 0.79 =**   A. 1.92   B. 1.56   C. 2.06   D. 2.02   E. None of the above

15. **411 x 6 =**   A. 2,666   B. 2,566   C. 2,466   D. 2,366   E. None of the above

16. **261 + 3548 =**   A. 6,158   B. 5,119   C. 3,819   D. 3,809   E. None of the above

17. **$67.73**
   - $23.74   A. $44.01   B. $43.01   C. $44.99   D. $43.99   E. None of the above

18. $\dfrac{3}{8} + \dfrac{1}{8} =$ A. $\dfrac{4}{16}$ B. $\dfrac{1}{2}$ C. $\dfrac{1}{4}$ D. $\dfrac{2}{16}$ E. None of the above

19. $\dfrac{2}{7} \times 7 =$ A. $\dfrac{14}{7}$ B. $\dfrac{2}{49}$ C. 2   D. $\dfrac{14}{49}$ E. None of the above

20. **7 + 5 x 5 − 6 =**   A. -12   B. 54   C. 25   D. 31   E. None of the above

21. **2(6 x 4 − 3 x 6) =**   A. 12   B. 30   C. 72   D. 270   E. None of the above

22. $8\overline{)5040}$ A. 705   B. 630   C. 605   D. 590   E. None of the above

23. **0.2 x 0.5 =**   A. 1   B. 0.1   C. 0.01   D. 0.001   E. None of the above

24. **5.8 x 10² =**   A. 11.6   B. 116   C. 5,800   D. 580   E. None of the above

25. $2\dfrac{3}{5} =$ A. $\dfrac{7}{5}$ B. $\dfrac{10}{3}$ C. $\dfrac{11}{5}$ D. $\dfrac{13}{5}$ E. None of the above

26. $16\overline{)66} =$ A. 4 r 4   B. 3 r 5   C. 4 r 2   D. 4   E. None of the above

27. $\left(3\dfrac{1}{5}\right) \div (4) =$ A. $12\dfrac{4}{5}$ B. $\dfrac{4}{5}$ C. $\dfrac{4}{9}$ D. $3\dfrac{1}{20}$ E. None of the above

28. **25% of 400 =**   A. 150   B. 300   C. 200   D. 100   E. None of the above

29. What is the prime factorization of 24?
    A. 2 x 3 x 4   B. 2^2 x 6   C. 2^3 x 3   D. 2 x 12   E. None of the above

30. There are 145 students in going on a fieldtrip to the Royals game in May. If each bus holds 45 students, how many buses will be needed for the fieldtrip?
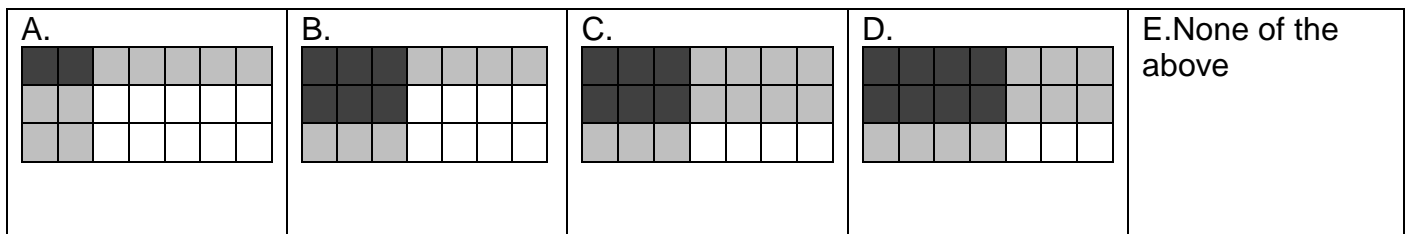   A. 1   B. 2   C. 3   D. 4   E. None of the above

31. Grapefruits sell for $0.72 each or a 6-grapefruit bag for $3.72. How much do you save if you buy the bags rather than buying them individually?
    A. $1.00   B. $1.20   C. $0.60   D. $0.72   E. None of the above

32. What number is missing from the list if the mean of the numbers is 6? 4, 2, 4, 2, ___?
    A. 4   B. 6   C. 12   D. 18   E. None of the above
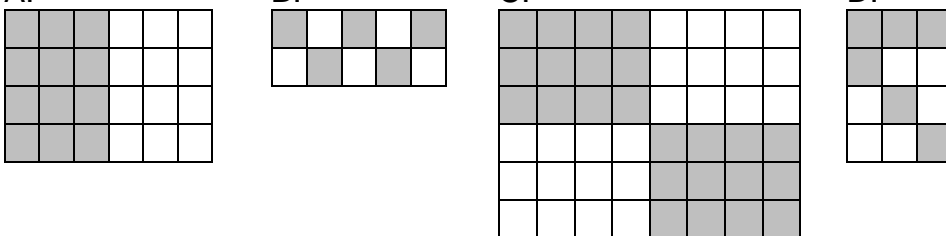
33. Which of the two following numbers have a difference of 3.7?
    A. 5.6, 9.2   B. 11.3, 14.6   C. 19.5, 21.8   D. 78.4, 82.1   E. None of the above

34. What is the sum of the integers: -8, -7, -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8
    A. 4   B. 0   C. 72   D. -72   E. None of the above

35. Which figure shows the value of $\dfrac{2}{3} \times \dfrac{4}{7}$?

A.	B.	C.	D.	E. None of the above

36. Which figure shows **NOT** show the decimal value of 0.5?
    A.   B.   C.   D.   E. None of the above

For questions #37-38, choose the closest estimate.

37. **92 x 801 =**   A. 7,100   B. 7,200   C. 73,000   D. 7,300   E. 72,000

38. $\dfrac{55}{9} - 1\dfrac{1}{6} + 2\dfrac{13}{15}$ A. 5   B. 6   C. 7   D. 8   E. 9

For questions #39-40, 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**.

39.   A.   736,173   B.   55,237   C.   25   D. 423 ÷ 6 = 70.5
               654,801   - 48,958   x 86
             + 415,136   6,279   2170
             1,806,110   E. None of the above

40.   A. $23.75   B.   150.090   C. ½ x ¼ = 1/8   D.   2/3 of 180 = 121
               $17.48   - 133.588
               $47.31   16.502   E. None of the above
             + $ 9.24
               $97.78

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

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