Kansas City Area Teachers of Mathematics
2018 KCATM Math Competition

NUMBER SENSE
GRADE 6
#1- 40
NO CALCULATOR

INSTRUCTIONS

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

- Time limit: **20 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. none of the above

- Reduce all fractions.

- Simplify improper fractions to 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. A car gets 23 miles per gallon. How far can it go on 13 gallons of gas?

   A. 299 miles   B. 230 miles   C. 301 miles   D. 319 miles   E. None of the above

2. A car travels 372 miles on 12 gallons of gas. What is the miles per gallon (mpg)?

   A. 29 mpg   B. 23 mpg   C. 30 mpg   D. 31 mpg   E. None of the above

3. A truck driver can only drive 8 hours per day. How far can the truck go if the truck travels on an interstate driving an average of 70 miles per hour?

   A. 490 miles   B. 560 miles   C. 630 miles   D. 520 miles   E. None of the above

4. Evaluate: $2(1 + 3)^2 - 5$

   A. 11   B. 59   C. 27   D. 160   E. None of the above

5. What is -3 + (-8) ?

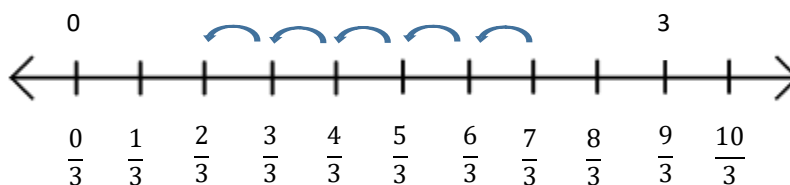   A. 5   B. 11   C. -5   D. -11   E. None of the above

6. If the ratio of boys:girls is 2:3 and there are 12 girls, how many boys would there be?

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

7. Which problem is the following number line diagram showing?

A. $2\frac{1}{3} - 1\frac{1}{3}$ B. $2\frac{1}{3} - 1\frac{2}{3}$ C. $2\frac{2}{3} - 2\frac{1}{3}$ D. $2\frac{1}{3} - 2$ E. None of the above

8. Golf is scored by the winner who has the lowest score at the end of the round of golf. The following scores were posted on the "leader board". Give the 1st, 2nd, and 3rd place winners.

Name	Score
Abe	-2
Josh	0
Calvin	-4
Rob	3

A. Abe, Josh, Calvin
B. Calvin, Josh, Abe
C. Rob, Josh, Abe
D. Calvin, Abe, Josh
E. None of the above

9. At Coyote Falls 13,512 gallons of water go over the waterfalls every 8 seconds. How many gallons of water go over the falls each second?

A. 1689   B. 1759   C. 1578   D. 1687   E. None of the above

10. Your parents work for a company that give an 18% discount on the yearly cost of cellphone service. If the yearly cost for a family is $1,500 what would be the final cost with the discount?

A. $1,225   B. $1320   C. $1230   D. $1,482   E. None of the above

11. You dumped your penny jar out on your kitchen table to count. You put piles of 50 cents together because you can put $0.50 in a paper wrapper to turn into the bank. How much money did you have if you 12 piles with a remainder of 28 pennies?

A. $12.28   B. $5.78   C. $6.78   D. $6.28   E. None of the above

12. Rate x Time = Distance can be used when we travel and we know 2 out of the 3 variables. What rate would you have to average if you want to travel 300 miles in 4 hours?

A. 67 mph   B. 75 mph   C. 72 mph   D. 70 mph   E. None of the above

13. Evaluate: 7 + 13 x 3 – 15

A. 45   B. -149   C. 31   D. 240   E. None of the above

14. Mr. Clark works at a roller skating rink. He is replacing wheels on the rental skates. He has 234 wheels. He puts 4 new wheels on each skate. How many skates will he be able to put all new wheels on?

A. 59   B. 58   C. 57   D. 56   E. None of the above

15. Find the difference: 2.7 – 1.28

   A. 1.52   B. 1.42   C. 1.98   D. 1.21   E. None of the above

16. Find the sum: 7.64 + 55 + 1.95 + 6.9

   A. 71.49   B. 108.3   C. 71.9   D. 72.09   E. None of the above

17. Find the sum: 24.007 + 36.2 + 8.17

   A. 68.427   B. 68.231   C. 68.267   D. 68.377   E. None of the above

18. Evaluate: 10^2 – 9 x 2

   A. 182   B. 82   C. 22   D. 2   E. None of the above

19. Which is another name for 4?

   A. (12 ÷ 3) - 2   B. (5 x 2) - 2^2 C. 2^3 - 2

   D. 2^4 - 10   E. None of the above

20. What is the prime factorization of 56?

   A. 7 x 8   B. 4 x 14   C. 2 x 4 x 7
   D. 2 x 2 x 2 x 7   E. None of the above

21. What is the simplest name for $(3 \times 10^4) + (6 \times 10^3) + (0 \times 10^2) + (2 \times 10) + (0 \times 1)$?

   A. 36,020   B. 360,020   C. 3,602   D. 3,620   E. None of the above

22. Evaluate: 3 | -5 | - 16 + | 7 |

   A. -24   B. -6   C. -1   D. -8   E. None of the above

23. Solve: ½ (4x – 6) = 11

   A. 4   B. 5   C. 7   D. 8   E. None of the above

Complete the fraction topics in #24-30.

24. Which fraction is the greatest?

   A. $\frac{4}{9}$ B. $\frac{2}{5}$ C. $\frac{1}{3}$ D. $\frac{4}{7}$ E. None of the above

25. $\frac{1}{6} + \frac{5}{8}$

   A. $\frac{3}{5}$ B. $\frac{17}{24}$ C. $\frac{19}{24}$ D. $\frac{3}{4}$ E. None of the above

26. $6\frac{4}{5} - 2\frac{1}{3}$

   A. $4\frac{7}{15}$ B. $4\frac{1}{3}$ C. $4\frac{1}{5}$ D. $4\frac{3}{2}$ E. None of the above

27. $\frac{7}{8} \times \frac{4}{7}$

   A. $\frac{1}{2}$ B. $\frac{5}{8}$ C. $\frac{11}{15}$ D. $\frac{2}{3}$ E. None of the above

28. $8\frac{1}{3} \times 1\frac{4}{5}$

   A. 15   B. $8\frac{4}{15}$ C. $14\frac{3}{5}$ D. $8\frac{1}{4}$ E. None of the above

29. $1\frac{7}{8} \div \frac{5}{6}$

   A. $2\frac{1}{5}$ B. $2\frac{1}{2}$ C. $2\frac{5}{18}$ D. $2\frac{1}{4}$ E. None of the above

30. $\frac{7}{8} = \frac{?}{56}$

   A. 42   B. 49   C. 48   D. 52   E. None of the above

31. 18 is 20% of which number?

 A. 36　　　　　B. 40　　　　　C. 80　　　　　D. 90　　　　　E. None of the above

32. Which of the following is a set of prime numbers?

 A. {47, 57}　　B. {1, 17}　　　C. {13,87}　　　D. {29, 71}　　　E. None of the above

33. Jay walks 3 miles every 2 days. How many days it will it take to walk 15 miles?

 A. 18 days　　B. 16 days　　C. 8 days　　　D. 10 days　　　E. None of the above

34. To make a shade of green we must add 2 drops of yellow paint to 5 drops of blue paint. If we use 20 drops of blue, how many drops of yellow should we add?

 A. 50 drops　B. 30 drops　C. 8 drops　　D. 4 drops　　E. None of the above

35. Baseball season is almost here. If a team gets 6 hits, 3 hits, 2 hits, 8 hits, and 11 hits in five consecutive games, what was the average (mean) number of hits per game?

 A. 5 hits　　　B. 6 hits　　　C. 7 hits　　　D. 8 hits　　　E. None of the above

36. What is another way of writing 7^4 ?

 A. 7 x 7 x 7 x 7　　　　　　B. 7 + 7 + 7 + 7　　　　　　C. 7 x 4
 D. 4 x 4 x 4 x 4 x 4 x 4 x4　　E. None of the above

37. What is 84.05 ÷ 0.5 ?

 A. 168.1　　　B. 16.81　　　C. 1,681　　　D. 1.681　　　E. None of the above

38. What is 12.08 x 3.4

 A. 410.072　　B. 41.072　　C. 4,100.72　　D. 41.72　　　E. None of the above

39. What is the product of: (-2)(-2)(-2)(-2)(-2) ?

 A. -10　　　　B. 10　　　　　C. -32　　　　D. 32　　　　　E. None of the above

40. Multiply: 237 x 25

 A. 5825　　　B. 5925　　　C. 5725　　　D. 2375　　　E. None of the above