

Kansas City Area Teachers of Mathematics
2013 KCATM Math Competition

**NUMBER SENSE
GRADE 6**

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) not given
i.e. $3 + 4 =$ a) 4 b) 5 c) 6 d) 8 e) not given
- 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 _____

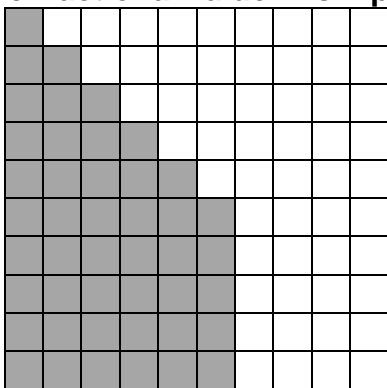
School _____

1. If you travel 181 miles in 3 hrs, how many miles per hour do you travel to the nearest whole mile?
 A. 62 mph B. 59mph C. 60mph D. 61mph E. None of the above
2. What is the ratio of the black circles to white circles: ○ ○ ○ ○ ○ ● ● ●
 A. 5:3 B. 5:8 C. 3:8 D. 3:5 E. None of the above
3. Which number is represented by: **thirty-five thousandths**?
 A. 35,000 B. 3,500 C. 0.035 D. 0.0035 E. None of the above
4. On a map, the scale reads: $\frac{3}{4}$ inch = 100 miles. How many miles would be represented by $3\frac{3}{4}$ inches on a map using this scale?
 A. 600 miles B. 500 miles C. 300 miles D. 400 miles E. None of the above

5. Order the following numbers from **smallest to largest**. $\frac{3}{4}$ $\frac{7}{12}$ $\frac{5}{8}$
- A. $\frac{7}{12} < \frac{5}{8} < \frac{3}{4}$ B. $\frac{3}{4} < \frac{5}{8} < \frac{7}{12}$
- C. $\frac{5}{8} < \frac{3}{4} < \frac{7}{12}$ D. $\frac{3}{4} > \frac{7}{12} > \frac{5}{8}$ E. None of the above

6. Order the following numbers from **largest to smallest**. $\frac{253}{10}$ $\frac{8}{3} \times 10$ $250 \div 10$
- A. $250 \div 10$, $\frac{253}{10}$, $\frac{8}{3} \times 10$ B. $\frac{8}{3} \times 10$, $\frac{253}{10}$, $250 \div 10$
- C. $250 \div 10$, $\frac{8}{3} \times 10$, $\frac{253}{10}$ D. $\frac{253}{10}$, $\frac{8}{3} \times 10$, $250 \div 10$
- E. None of the above

7. Give the **fractional value in simplest form** for the shaded area in the square:



- A. $\frac{9}{20}$ B. $\frac{45}{100}$
- C. $\frac{49}{100}$ D. $\frac{11}{25}$
- E. None of the above

8. What is the **sale price** on a pair of shoes costing \$68 with a coupon for 25% off?
 A. \$17 B. \$25 C. \$14 D. \$49 E. None of the above

9. Find $3.5 + 5.38$

- A. 8.538 B. 5.73 C. 8.88 D. 5.738 E. None of the above

10. The best golfer in a tournament is the one with the **lowest** score compared to the standard par score. Determine the player's score by adding his scores for each hole. Who won the match?

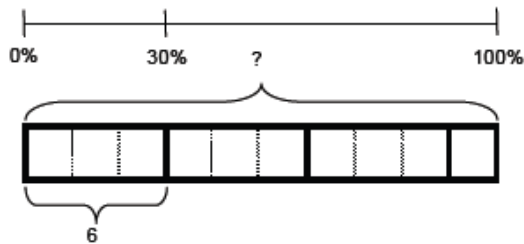
	1	2	3	4	5	6	7	8	9	Score
Alan	-1	0	-2	+1	-1	+2	3	-1	-1	
Bob	2	0	-1	-1	-1	0	1	-2	1	
Cal	0	0	0	-1	-1	-1	1	-1	2	
Don	1	-1	-1	-2	0	0	1	0	-1	

- A. Alan B. Bob C. Cal D. Don E. None of the above

11. A cookie recipe calls for $\frac{3}{8}$ cup packed brown sugar and $\frac{3}{4}$ cup white sugar. What is the total amount of sugar in the recipe?

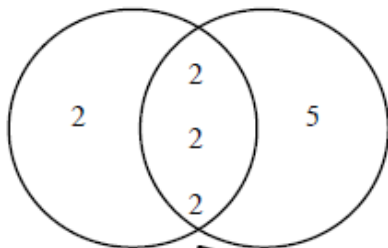
- A. $1\frac{1}{2}$ cup B. $1\frac{1}{8}$ cup C. $1\frac{1}{4}$ cup D. $1\frac{2}{3}$ cup E. None of the above

12. Find the value of the ? in the diagram:



- A. 18 B. 20
C. 22 D. 24
E. None of the above

13. To find the GCF of two numbers, a Venn diagram can be used. What are the two numbers?



- A. 8 and 10 B. 16 and 40
C. 8 and 30 D. 80 and 8
E. None of the above

14. You missed 8 questions out of 20 questions on a quiz. What percent did you earn?

- A. 72% B. 40% C. 60% D. 48% E. None of the above

15. Which statement is equivalent to $12 \div \frac{1}{2}$?

- A. How many times will 2 go into 12?
- B. How many $\frac{1}{2}$ units are in the number 12?
- C. What is 12 divided by 2?
- D. What is $12 \times \frac{1}{2}$?
- E. None of the above

16. You are reading a good book for your outside reading in Language Arts. You are required to read $3\frac{1}{2}$ hours a week. If you read $\frac{1}{2}$ hr. on Monday, 1 hour on Tues., 30 minutes on Wed., and 15 minutes on Thursday, how much more do you need to read to meet your total of $3\frac{1}{2}$ hours?

- A. $\frac{1}{2}$ hour
- B. 1 hr. 15 minutes
- C. 15 minutes
- D. 45 minutes
- E. None of the above

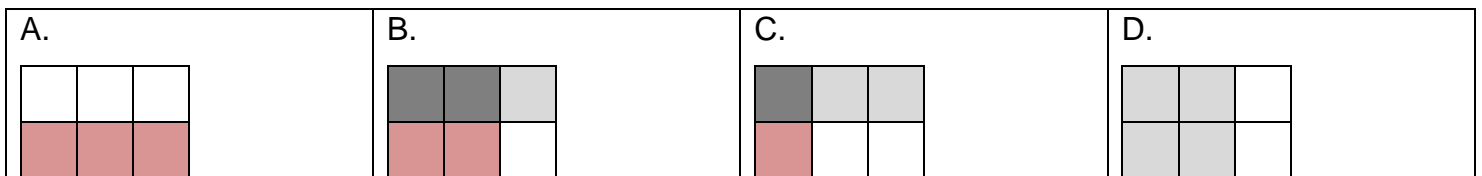
17. What is 40% of 36?

- A. 16.2
- B. 11.1
- C. 12.6
- D. 14.4
- E. None of the above

18. In a class, if 5 people like chocolate chip cookies and that represents 20% of the class, how many students are in the class?

- A. 25
- B. 24
- C. 20
- D. 15
- E. None of the above

19. Which deep shaded area of the grids shows the product of $\frac{1}{2} \times \frac{2}{3}$?



E. None of the above

20. Juan has $\frac{2}{3}$ of an hour to make bracelets. It takes him $\frac{1}{6}$ of an hour to make one. How many bracelets can Juan make?

- A. 2
- B. 3
- C. 4
- D. 5
- E. None of the above

21. Kelsey is out for basketball. Each player must make 60 baskets before they leave practice. If Kelsey can make 4 baskets per minute, how long will it take Kelsey to make the 60 baskets?
- A. 40 min. B. 12 min. C. 24 min. D. 15 min. E. None of the above
22. Grace bought $1\frac{1}{2}$ yard of fabric to make book covers. If each cover takes $\frac{1}{8}$ of a yard, how many book covers can Grace make?
- A. 12 B. 8 C. 16 D. 4 E. None of the above
23. What is $32\overline{)8456}$? A. $26\frac{1}{4}$ B. $264\frac{1}{4}$ C. $264\frac{3}{4}$ D. $246\frac{1}{6}$ E. None of the above
24. What is the great common factor (GCF) of 64 and 20?
- A. 1280 B. 8 C. 320 D. 4 E. None of the above
25. What is the GCF of any two prime numbers?
- A. 1 B. 2 C. 3 D. 4 E. None of the above
26. $\left(-\frac{3}{5}\right)^2 =$ A. $\frac{6}{10}$ B. $-\frac{3}{5}$ C. $\frac{9}{25}$ D. $-\frac{6}{10}$ E. None of the above
27. Your sixth grade class was given 72 quarter sandwiches from Subway and 48 bags of chips. Everybody gets the same number of sandwiches as every other person and everybody gets the same number of bags of chips as every other person. Find the largest possible number of students in your class?
- A. 18 B. 12 C. 28 D. 24 E. None of the above
28. Every 3 weeks, your parents pay you for babysitting. Every 4 weeks your grandparents give you \$10. In **how many days** will you receive money from both your parents for babysitting and the gift of \$10 from your grandparents on the exact same day?
- A. 7 days B. 28 days C. 42 days D. 84 days E. None of the above

29. What is the value of $2[6 - (-3)]$?
A. 3 B. -18 C. 9 D. 2 E. None of the above
30. If 1,000 students represents 80% of the people at the KCATM contest today, what would be the total number of people at today's contest?
A. 1,750 B. 1,250 C. 1,075 D. 1,500 E. None of the above
31. Your piggy bank had \$40.56 in it at the New Year. You spent the following amounts at the store: T-shirt: \$7.50, snacks: \$4.36, and miscellaneous: \$15.88. How much money do you left?
A. \$12.20 B. \$13.82 C. \$27.74 D. \$12.82 E. None of the above
32. What is the value of: $8 + 2 \times 7 - 3 \times 4$?
A. 10 B. 268 C. 76 D. 58 E. None of the above
33. $(0.2)^3 =$
A. 0.06 B. 0.6 C. 0.08 D. 0.008 E. None of the above
34. $4\frac{1}{5} - 2\frac{3}{4} =$
A. $2\frac{1}{2}$ B. $1\frac{9}{20}$ C. $1\frac{19}{20}$ D. $2\frac{1}{10}$ E. None of the above
35. Find the value: $1.75 \times 2 - \frac{1}{4}$
A. $3\frac{1}{8}$ B. $3\frac{3}{4}$ C. $3\frac{1}{4}$ D. $3\frac{1}{2}$ E. None of the above
36. $(-50) \times (94) =$
A. 470 B. -470 C. 4700 D. -4700 E. None of the above

Shade the correct answer!

Example: A ● C D E

Name _____

School _____

- 1. A B C D E
- 2. A B C D E
- 3. A B C D E
- 4. A B C D E
- 5. A B C D E
- 6. A B C D E
- 7. A B C D E
- 8. A B C D E
- 9. A B C D E
- 10. A B C D E
- 11. A B C D E
- 12. A B C D E
- 13. A B C D E
- 14. A B C D E
- 15. A B C D E
- 16. A B C D E
- 17. A B C D E
- 18. A B C D E
- 19. A B C D E
- 20. A B C D E

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

- 21. A B C ● E
- 22. ● B C D E
- 23. A ● C D E
- 24. A B C ● E
- 25. ● B C D E
- 26. A B ● D E
- 27. A B C ● E
- 28. A B C ● E
- 29. A B C D ●
- 30. A ● C D E
- 31. A B C ● E
- 32. ● B C D E
- 33. A B C ● E
- 34. A ● C D E
- 35. A B ● D E
- 36. A B C ● E
- 37. ● B C D E
- 38. A B C D ●
- 39. A B C ● E
- 40. ● B C D E