Kansas City Area Teachers of Mathematics
2017 KCATM Math Competition

Numbers and Operations
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) None of the above
  Ex: 3 + 4 = A. 4 B. 5 C. 6 D. 8 **E. None of the above**
- 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 _____ School _____

1. 14.7 + 67.5 A. 81.2 B. 53.8 C. 82.2 D. 83.2 E. None of the above

2. ½ x $6.54 A. $3.50 B. $2.75 C. $2.77 D. $3.27 E. None of the above

3. 1000 – 763 A. 247 B. 347 C. 347 D. 337 E. None of the above

4. 8 x 15 A. 110 B. 120 C. 115 D. 125 E. None of the above

5. 84.6 ÷ 3 A. 26.2 B. 27.2 C. 28.2 D. 29.2 E. None of the above

6. What is the remainder of 76 ÷ 4? A. 0 B. 1 C. 2 D. 3 E. None of the above

7. What digit is in the hundredths position: 123.456

   A. 1 B. 2 C. 4 D. 5 E. None of the above

8. $\frac{5}{6} - \frac{3}{8} =$ A. $\frac{2}{2}$ B. $\frac{11}{24}$ C. $\frac{1}{12}$ D. $\frac{17}{24}$ E. None of the above

9. $1\frac{2}{3} + 2\frac{4}{5} =$ A. $3\frac{6}{8}$ B. $3\frac{3}{4}$ C. $4\frac{7}{15}$ D. $3\frac{7}{15}$ E. None of the above

10. $\frac{5}{8} \times \frac{4}{9} =$ A. $\frac{5}{18}$ B. $1\frac{3}{17}$ C. $\frac{32}{45}$ D. 9 E. None of the above

11. $\frac{2}{3} \div \frac{4}{3} =$ A. . $\frac{1}{2}$ B. 2 C. $1\frac{1}{3}$ D. $\frac{8}{9}$ E. None of the above

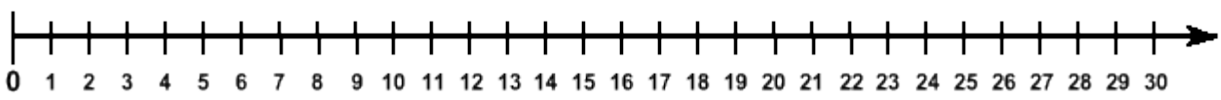
12. If 7 people want to share 45 Oreos, **between which two whole numbers** does the answer fall?

   A. 3 and 4 B. 4 and 5 C. 5 and 6 D. 6 and 7 E. None of the above

13. The fraction $\frac{3}{4}$ is **equivalent** to which fraction?

   A. $\frac{6}{9}$ B. $\frac{15}{20}$ C. $\frac{12}{15}$ D. $\frac{9}{16}$ E. None of the above

14. Use the number line to determine the number that is **15 more than (12 – 5)**.



   A. 20 B. 26 C. 25 D. 22 E. None of the above

15. Which **expression is the same** as "the sum of 7 and 6, multiplied by 3"?

A. 3 x 7 + 6 B. 7 + 3 x 6 C. 3(7 + 6)
D. 7 + 6 + 3 E. None of the above

16. The problem: 5 + 5 + 5 + 5 + 5 + 5 is **NOT** the same as:

A. 5 x 5 B. 5 x 3 + 5 x 3 C. (5 x 5) + 5
D. 5 x 6 E. None of the above

17. 389 ÷ 5 =

A. 76 r 1 B. 77 r 4 C. 77 D. 77 r 3 E. None of the above

18. Triple 89.

A. 180 B. 178 C. 267 D. 272 E. None of the above

19. 65 x 14 is the same as:

A. (60 x 14) + (5 x 14) B. (60 x 10) + (5 x 14) C. (60 x 14) + (5 x 2)
D. (60 x 10) + (65 x 2) E. None of the above

20. How many hundreds are in 1,000,000?

A. 1 million B. 1 thousand C. 10 thousand D. 100 thousand E. None of the above

21. What would be the amount of a 15% tip on an $80 meal?

A. $8 B. $15 C. $13 D. $12 E. None of the above

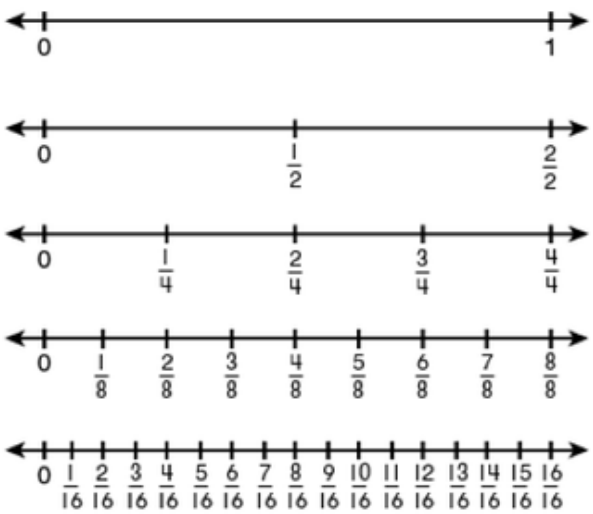
22. $\frac{4}{5}$ is equivalent to what decimal numeral?

A. 0.4 B. 0.6 C. 0.45 D. 0.8 E. None of the above

23. What is the remainder: $\frac{16734287}{5}$

A. 2 B. 3 C. 4 D. 1 E. None of the above

Use the fraction values below to help you answer the questions #24-28.



24. Which fraction is the equivalent to $\frac{1}{4}$?

A. $\frac{8}{16}$ B. $\frac{2}{4}$ C. $\frac{4}{16}$ D. $\frac{3}{8}$ E. None of the above

25. What is the sum of $\frac{1}{8} + \frac{5}{16}$?

A. $\frac{1}{4}$ B. $\frac{3}{8}$ C. $\frac{13}{16}$ D. $\frac{7}{16}$ E. None of the above

26. What is the value of $1 - \frac{6}{8}$?

A. $\frac{1}{4}$ B. $\frac{1}{16}$ C. $\frac{1}{8}$ D. $\frac{3}{8}$ E. None of the above

27. What is the value of $\frac{2}{8} \div \frac{1}{2}$?

A. $\frac{3}{16}$ B. $1\frac{1}{2}$ C. $\frac{1}{2}$ D. $\frac{1}{8}$ E. None of the above

28. What is the value of $\frac{1}{2}$ of $\frac{12}{16}$?

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

29. Evaluate: **6 + 15 ÷ 3**

A. 7 B. 6 C. 11 D. 17 E. None of the above

30. Evaluate: **3 + 6 x (5 + 1) ÷ 3 - 7**

A. 6 B. 11 C. -13 D. 8 E. None of the above

31. What is the number 413.245 **rounded to the nearest <u>hundredth</u>**?

A. 413.5 B. 413.24 C. 413.2 D. 413.25 E. None of the above

32. What is **2 billion plus 10 million**?

A. 1,100,000,000 B. 2,010,000,000 C. 2, 000,010
D. 2,000,010,000 E. None of the above

33. If you purchase $11.31 worth of groceries and give the cashier $20, **what would be your change**?

A. $8.79 B. $8.70 C. $8.69 D. $9.69 E. None of the above

34. Base 10 means that every digit to the **left** of a digit is 10 times **greater** than that digit and every digit to the **right** of a digit is **1/10** the value of that digit.

Use the number **25.3471.**

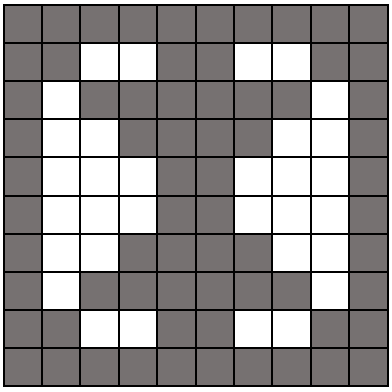
W**hat is the value of the digit "1" <u>compared to the value</u> of the digit "4" in the number?**

A. The value of the digit 1 is one-fourth the value of the digit 4 in the number.
B. The value of the digit 1 is 1/10 times the value of the digit 4 in the number.
C. The value of the digit 1 is 1/100 times the value of the digit 4 in the number.
D. The value of the digit 1 is 1/1000 times the value of the digit 4 in the number.
E. None of the above

35. Choose the correct **expanded form** for: 2,000**,**100.05

A. 2 x 1,000,000 + 1 × 100 + 5 × (1/1000)
B. 2 x 100,000 + 1 × 10,000 + 5 × (1/10)
C. 2 × 10,000,000 + 1 × 100 + 5 × (1/100)
D. 2 × 1,000,000 + 1 × 100 + 5 × (1/100)
E. None of the above

36. Which **decimal value** is equal to the fractional part of the **shaded part** of the square below?



A. 0.68 B. 0.70 C. 0.58 D. 0.72 E. None of the above

37. How many nickels are in $8.20?

A. 163 B. 165 C. 167 D. 170 E. None of the above

38. $\sqrt{89}$, the square root of 89, is a number times itself equal to 89. The answer is between:

A. 7 and 8 B. 8 and 9 C. 9 and10 D. 10 and 11 E. None of the above

39. When the following common fractions are changed to a decimal, the answer is either terminates or repeats. How many of the following fractions have decimals which terminate?

1/2 1/3 1/4 1/5 1/6 1/7 1/8 1/9 1/10

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

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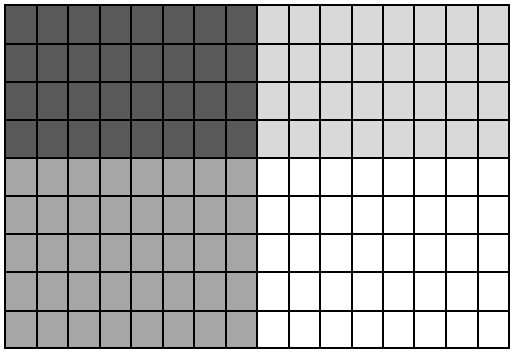
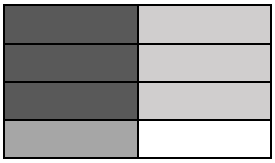
40. Which **darkest shaded area** in the arrays shows the answer to the multiplication of **¾ x ½** ?

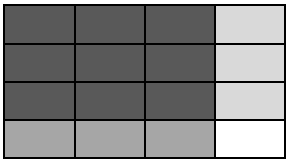
A.



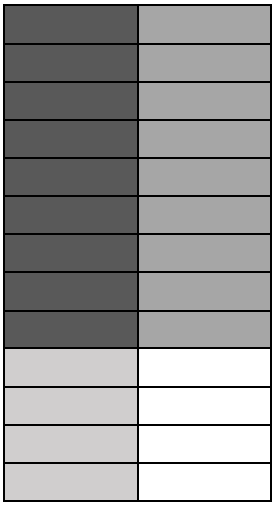
B.



C.



D.



E. None of the above