

Kansas City Area Teachers of Mathematics
2014 KCATM Math Competition

Numbers and Operations
GRADE 5

NO CALCULATOR

INSTRUCTIONS

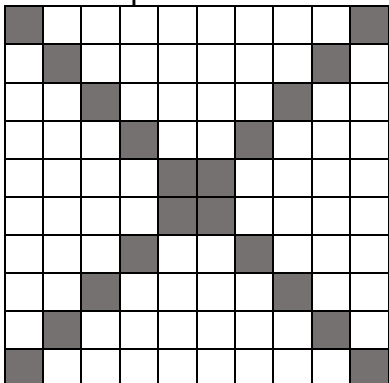
- **Do not open this booklet** until instructed to do so.
- Time limit: **15 minutes**
- You **may NOT use calculators** on this test.
- Some multiple-choice questions do not have the correct answer as one of the choices. On those questions, the response is e) not given
i.e. $3 + 4 =$ a) 4 b) 5 c) 6 d) 8 e) Not given
- If a division problem has a remainder (for instance $21 \div 5 = ??$), 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 when divided by 5 has a remainder of 3?
 A. 242 B. 388 C. 414 D. 247 E. None of the above
2. Sonya Thomas, the winner of the 2012 Nathan’s Hot Dog Eating Contest, ate 40 hotdogs in 10 minutes which was the women’s world record. How many **seconds** did it take to eat each hot dog?
 A. 10 sec. B. 15 sec. C. 20 sec. D. 25 sec. E. None of the above
3. Choose the most reasonable estimate for $34 \times 56 \times 300$.
 A. 200,000 B. 300,000 C. 400,000 D. 500,000 E. None of the above
4. Half-time work is 4 hours per day. If Connie works half-time at a local grocery store three days a week, about how many hours of work will she work in one month? A month has 4 weeks.
 A. 12 B. 18 C. 24 D. 48 E. None of the above
5. Denise and Valerie paid \$12.80 for two dips of ice-cream each. How much does each dip cost?
 A. \$3.20 B. \$6.40 C. \$4.40 D. \$2.40 E. None of the above
6. The number written as: $123 \times 1000 + 10 \times 456$ is represented by:
 A. 227,560 B. 127,650 C. 127,560 D. 12,756 E. None of the above
7. Six thousand five hundred is how many **tens**?
 A. 65 B. 650 C. 6,500 D. 65,000 E. None of the above
8. The square root of 2,586 is between:
 A. 50 and 60 B. 40 and 50 C. 30 and 40 D. 20 and 30 E. None of the above
9. Evaluate: $2 + 8 \div 4 - 5$
 A. -10 B. 10 C. 1 D. -1 E. None of the above
10. What fractional part is shaded in the hundreds chart below?



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

11. Which of these numbers divides 84,556 and has remainder of 0?
- A. 3 B. 4 C. 5 D. 6 E. None of the above
12. Heather walks dogs for $2\frac{1}{2}$ hours every day of the week. At \$4.50 per hour, what does Heather get paid weekly?
- A. \$78.75 B. \$56.25 C. \$83.25 D. \$70.75 E. None of the above
13. Clare decided to buy chocolate candy for her birthday party. She paid \$0.75 for each piece. She bought full boxes containing 24 pieces each. If she paid \$234 at the cashier, how many boxes of chocolate did she buy?
- A. 14 B. 13 C. 12 D. 11 E. None of the above
14. Which fraction is the largest? $\frac{3}{7}$, $\frac{3}{5}$, $\frac{1}{3}$, $\frac{2}{5}$, $\frac{1}{2}$
- A. $\frac{1}{2}$ B. $\frac{3}{5}$ C. $\frac{1}{3}$ D. $\frac{2}{5}$ E. None of the above
15. $630 \div 30 =$
- A. 12 B. 15 C. 18 D. 21 E. None of the above
16. $850 + 30,000 - 3,400 - 600 + 250 =$
- A. 27,100 B. 72,100 C. 32,120 D. 13,750 E. None of the above
17. **40% of 95 =**
- A. 42 B. 40 C. 38 D. 36 E. None of the above
18. $2\frac{1}{3} + \frac{3}{4} + 1\frac{1}{4} =$ *(Simplify your answer to a reduced mixed number.)*
- A. $4\frac{1}{3}$ B. $1\frac{2}{3}$ C. $2\frac{3}{4}$ D. $1\frac{2}{5}$ E. None of the above
19. $6 \cdot \frac{5}{3} =$
- A. 3 B. 6 C. 10 D. $\frac{1}{2}$ E. None of the above

20. $45 \times 0.003 =$

- A. 13.5 B. 1.35 C. 0.135 D. 0.0135 E. None of the above

21. $3 \times 4 - (4 + 2) + (3 \times 2) \div 4 =$

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

22. $4 \overline{)3466}$ A. 866.5 B. 688.5 C. 868.75 D. 886.75 E. None of the above

23. 0.4×0.6 A. 240 B. 24 C. 2.4 D. 0.24 E. None of the above

24. 0.0436×10^5 A. 4.36 B. 43.6 C. 436 D. 4360 E. None of the above

25. $4\frac{1}{9} =$ A. $\frac{5}{9}$ B. $\frac{14}{9}$ C. $\frac{37}{9}$ D. $\frac{35}{9}$ E. None of the above

26. $203 \div 15$ A. 16 r 5 B. 15 r 6 C. 14 r 7 D. 13 r 8 E. None of the above

27. $(6) \div \left(2\frac{4}{8}\right)$ A. $\frac{12}{5}$ B. $\frac{5}{12}$ C. $\frac{5}{8}$ D. $5\frac{1}{3}$ E. None of the above

28. **25% of \$80 =** A. \$19 B. \$20 C. \$21 D. \$22 E. None of the above

29. What is the **prime factorization** of 144?

- A.
- $2^3 \times 3^5$
- B.
- $2^3 \times 2^2$
- C.
- $2^4 \times 3^2$
- D.
- $2^4 \times 3^3$
- E. None of the above

30. Sue wants to save \$1,960 for a trip to Hawaii. Select the rate and time frame below that Sue could use to save \$1,960 she needs to buy a vacation package to Hawaii.

- A. 140 days at \$11.75 per day B. 100 days at \$12.25 per day
-
- C. 150 days at \$10.25 per day D. 160 days at \$12.25 per day
-
- E. None of the above

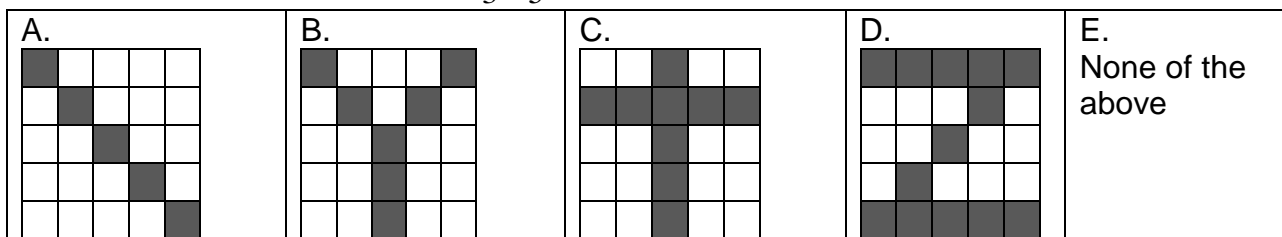
31. Find the selling price of a snowboard that costs \$350 and then is marked **up 30%**.
 A. \$455 B. \$380 C. \$305 D. \$355 E. None of the above


32. $0.005 + 0.05 + 500.5 + 55$
 A. 555.88 B. 5.555 C. 55.555 D. 555.555 E. None of the above

33. Which of the two following numbers have a sum of 21.96?
 A. 11.6, 12.2 B. 10.03, 11.93 C. 14.3, 11.5
 D. 14.4, 2.44 E. None of the above

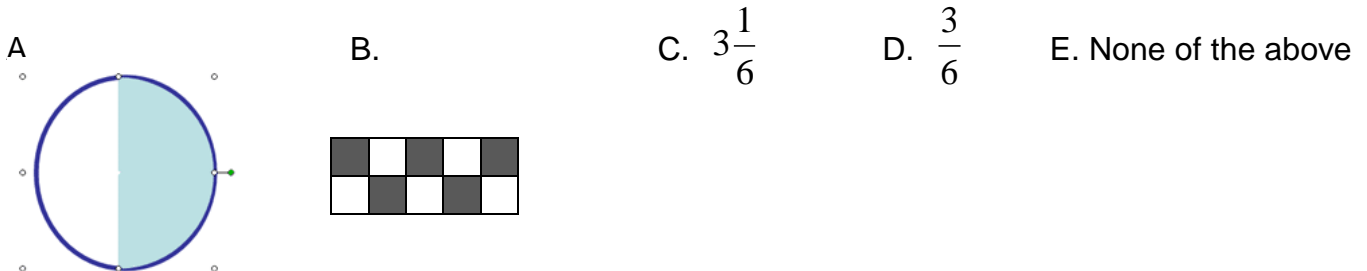
34. What is the sum of the whole odd numbers from 1 to 100? ($1 + 3 + 5 + 7 + 9 + \dots + 97 + 99$)
 A. 5,500 B. 4500 C. 3500 D. 2500 E. None of the above

35. Which figure shows the value of $\frac{1}{3} \times \frac{3}{5}$ in the **darkest** shaded region?



36. Which is **NOT** equivalent to 0.80?
 A. dark shading:  B. $\frac{8}{10}$ C. 80% D. $\frac{80}{100}$ E. None of the above

37. Which is **NOT** a way to represent $3 \times \frac{1}{6}$?



38. Round 3.086 to the nearest tenth.

A. 3

B. 3.1

C. 3.09

D. 3.18

E. None of the above

In each of the next two questions, there are four calculations, of which one may be incorrect. Find the **incorrect calculation**, if any.

39. A.
$$\begin{array}{r} 782,149 \\ 821,242 \\ + 6,152,309 \\ \hline 7,755,700 \end{array}$$

B.
$$\begin{array}{r} 28,450 \\ - 8,999 \\ \hline 19,451 \end{array}$$

C.
$$\begin{array}{r} 300 \\ \times 150 \\ \hline 4500 \end{array}$$

D. $666 \div 12 = 55.5$

E. $72 \times 12 = 864$

40. A.
$$\begin{array}{r} \$10.45 \\ \$29.55 \\ \$9.98 \\ + \$9.03 \\ \hline \$59.01 \end{array}$$

B.
$$\begin{array}{r} \$265.40 \\ - \$35.90 \\ \hline \$ 229.30 \end{array}$$

C. $\frac{4}{5} \div \frac{2}{3} = 1\frac{2}{10}$

D. $\frac{2}{5}$ of 75 = 30

E. $2 \div \frac{2}{3} = 3$

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

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