

Kansas City Area Teachers of Mathematics  
2011 KCATM Math Competition

**MENTAL MATH  
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**
- 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  $2\frac{1}{3}$

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1.  $322 \times 3 =$  a) 688 b) 998 c) 966 d) 655 e) not given
2.  $1234 + 6543 =$  a) 7777 b) 7577 c) 7676 d) 7761 e) not given
3.  $\$56.94 - \$28.47 =$  a) \$34.53 b) \$32.53 c) \$28.57 d) \$28.47 e) not given
4.  $64 \div 5 =$  a) 10.4 b) 12.8 c) 10.3 d) 12.4 e) not given
5.  $67 + 4 + 17 =$  a) 70 b) 88 c) 80 d) 84 e) not given
6.  $78 + 225 - 50 =$  a) 253 b) 353 c) 248 d) 348 e) not given
7.  $51.8 - 36.4 =$  a) 15.3 b) 85.4 c) 25.4 d) 88.2 e) not given
8.  $\$7.72 + \$6.13 =$  a) \$13.61 b) \$1.59 c) \$1.62 d) \$13.85 e) not given
9.  $34 + 46 + 78 + 20 =$  a) 168 b) 178 c) 188 d) 198 e) not given
10.  $62,620 + 390 =$  a) 62,370 b) 63,010 c) 62,010 d) 63,910 e) not given
11.  $7,780 - 875 =$  a) 7,105 b) 8,655 c) 7,705 d) 6,905 e) not given
12.  $43.7 - 17.9 =$  a) 25.8 b) 26.8 c) 34.2 d) 24.2 e) not given
13.  $17 \frac{1}{2} + 6 \frac{1}{4} =$  a)  $23 \frac{1}{3}$  b)  $11 \frac{1}{4}$  c)  $23 \frac{3}{4}$  d)  $24 \frac{1}{6}$  e) not given
14.  $\frac{6}{7} \div 3 =$  a)  $1 \frac{2}{7}$  b)  $2 \frac{4}{7}$  c)  $\frac{2}{7}$  d)  $\frac{3}{5}$  e) not given
15.  $\left(\frac{3}{4}\right)\left(\frac{1}{2}\right) =$  a)  $\frac{3}{8}$  b)  $1 \frac{1}{2}$  c)  $\frac{1}{2}$  d)  $\frac{2}{3}$  e) not given
16.  $8 + 2 + 30 \times 2 =$  a) 80 b) 70 c) 42 d) 66 e) not given

17.  $3 \overline{)6912}$  has remainder:  
 a) 4            b) 3            c) 2            d) 1            e) not given
18. What number is in the tenths place: 28.735  
 a) 2            b) 3            c) 8            d) 7            e) not given
19. **20% of 400 =**            a) 8            b) 380            c) 80            d) 200            e) not given
20.  **$7/8$  of 80 =**            a) 50            b) 60            c) 70            d) 80            e) not given
21.  **$934 \div 3 =$**             a) 301            b)  $311 \frac{1}{3}$             c)  $116 \frac{2}{3}$             d) 120            e) not given
22.  **$89 \div 4 =$**             a) 22.5            b) 22.25            c) 26.1            d) 21.5            e) not given
23. Apples sell for 2 for \$1.25. How much change do you have left from \$10 if you purchase a dozen apples?  
 a) \$2.00            b) \$7.75            c) \$2.50            d) \$8.75            e) not given
24. Find the total cost of the following winter items. Hat: \$13.53, boots: \$62.75, gloves: \$7.99  
 a) \$85.00            b) \$85.75            c) \$83.57            d) \$84.27            e) not given
25. What is the sum of the first 20 numbers:  $1 + 2 + \dots$  through 20?  
 a) 210            b) 109            c) 11            d) 81            e) not given
26. You have 4 Chiefs t-shirts, 2 Chiefs sweatshirts, and 2 pair of jeans you want to select one outfit out of for the game. How many different outfits can you make?  
 a) 8            b) 16            c) 6            d) 10            e) not given

For questions #27-31 choose the closest estimate to the answer for each problem.

27.  **$19 \times 700 =$**             a) 140            b) 1,400            c) 14,000            d) 140,000            e) 14
28.  $\frac{48}{7} - \frac{15}{16} + 1\frac{23}{25}$             a) 5            b) 6            c) 7            d) 8            e) 9
29.  **$2,503 - 789 =$**             a) 1,700            b) 1,800            c) 2,200            d) 1,900            e) 2,000
30.  $198 \overline{)6,045}$             a) 3            b) 6            c) 30            d) 60            e) 40
31.  **$0.6 \times 392.75 =$**             a) 24,000            b) 2,400            c) 240            d) 24            e) 4

#32-35: Write the next number in the sequence:

32. 45, 39, 33, 27, ... a) 24    b) 23    c) 22    d) 21    e) not given
33. 8, 24, 72, ...    a) 96    b) 108    c) 105    d) 214    e) not given
34. -400, 200, -100, 50, ... a) 30    b) -30    c) -25    d) 25    e) not given
35. 4, 10, 17, 25, ...    a) 34    b) 35    c) 36    d) 37    e) not given

For questions #36-38, 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**.

36. a) 
$$\begin{array}{r} 814,123 \\ 654,812 \\ + 245,637 \\ \hline 1,714,572 \end{array}$$
    b) 
$$\begin{array}{r} 85,234 \\ - 54,987 \\ \hline 30,247 \end{array}$$
    c) 
$$\begin{array}{r} 25 \\ \times 70 \\ \hline 1720 \end{array}$$
    d)  $246 \div 6 = 41$   
e) not given
37. a) 
$$\begin{array}{r} 98,562 \\ + 48,569 \\ \hline 147,131 \end{array}$$
    b) 
$$\begin{array}{r} 150,090 \\ - 133,588 \\ \hline 16,502 \end{array}$$
    c) 
$$\begin{array}{r} 52 \\ \times 57 \\ \hline 2964 \end{array}$$
    d)  $657 \div 5 = 121.4$   
e) not given
38. a) 
$$\begin{array}{r} 99.9 \\ + 36.4 \\ \hline 136.5 \end{array}$$
    b) 
$$\begin{array}{r} 42.7 \\ - 34.8 \\ \hline 7.9 \end{array}$$
    c) 
$$\begin{array}{r} 399 \\ \times 0.5 \\ \hline 199.5 \end{array}$$
    d)  $24.3 \div 3 = 8.1$   
e) not given

39.  $3\frac{1}{6} + 9\frac{1}{2} + 6\frac{2}{3} =$

- a)  $19\frac{1}{2}$     b)  $18\frac{4}{9}$     c)  $19\frac{5}{6}$     d)  $18\frac{4}{11}$     e) not given
40. If your first 2 test scores are 78% and 77%, and you want to try to earn exactly 80% as an average (mean) of three tests, what would you need on the 3<sup>rd</sup> test?
- a) 86%    b) 85%    c) 84%    d) 83%    e) not given