Cullman Middle School Math Tournament
2010 6th Grade Test

1. Simplify. $3^3 + 5[2^5 - 5^2 + 7(8^0 + 16 \div 2^2)]$
   A) 184 B) 189 C) 202 D) 237

2. Find the missing number 40•42•44 = 22•21•20• _____
   A) 8 B) 10 C) 12 D) 16

3. What is the product of the whole number factors of 16?
   A) 256 B) 384 C) 512 D) 1024

4. If set A = {A,B,C,D}, B = {A,C,D,F}, C = {B,D,F,H}, and set D = {A,D,G,H}, find (A∩C) U (B∩D).
   A) {A,B,D} B) {A,C,D,F,H} C) {A,B,C,D} D) set D

5. Caroline says, "I am thinking of a three-digit number. If the three digits appear in decreasing order from left to right, and the product of the digits is 105, what is the sum of the digits?"
   A) 8 B) 11 C) 12 D) 15

6. 5 hours 53 minutes before 3:30 pm is _____.
   A) 10:23 am B) 11:37 am C) 9:37 am D) 9:13 am

7. Add – 90 + -89 + - 88 + … + 97 + 98 + 99
   A) 294 B) 760 C) 855 D) 945

8. What is the larger angle formed by the hands of a clock at 4 pm?
   A) 120° B) 150° C) 210° D) 240°

9. Find the volume of a rectangular prism with length 2 ft, width 6 in and height 8 in.
   A) 96 in^2 B) 96 in^3 C) 1152 in^2 D) 1152 in^3

10. Simplify. $\dfrac{\frac{1}{2} + \frac{3}{4}}{\frac{1}{4} + \frac{2}{3}}$
    A) 15/11 B) 14/9 C) 55/48 D) 11/15

11. Subtract. 1 – 1/3 – 1/6 – 1/9 – 1/18
    A) 1/6 B) 2/9 C) 1/3 D) 1/2

12. If 5 • m = 11 + 12 + 13 + 14 + 15, find m.
    A) 5 B) 11 C) 12 D) 13

13. Which of the following is equal to 13.875?
    A) 115/8 B) 109/8 C) 111/8 D) 112/8

14. Find the additive inverse of 0.75.
A) - 3/4 B) 3/4 C) – 4/3 D) 4/3

15. Let A = the number of sides in a heptagon, B = the number of edges in a cube and C = the number of faces on a square pyramid, find 2A + 3B – 2C.
A) 20 B) 22 C) 26 D) 40

16. If x*y = 3y – 2x, then evaluate (3*5)*4.
A) – 6 B) -11 C) 6 D) 4

17. If the ordered pair (- 4, 5) is moved 10 units up and 5 units left, what are the coordinates of the new ordered pair?
A) (- 9, 15) B) (6, 0) C) (6, 10) D) (-9, -5)

18. What property of equality states that 2 + (3 + 4) = (2 + 3) + 4?
A) Commutative B) Associative C) Transitive D) Identity

19. Find $4x^2y^2 – 4x + 8$ if x=3, y= - 2 and z= 1.
A) 92 B) 124 C) 140 D) 144

20. Simplify. – 3 – (- 4) – 5 – (- 7)
A) – 19 B) 1 C) 5 D) - 11

21. What is the ten-thousandths digit in the decimal form of 2/7?
A) 2 B) 4 C) 5 D) 7

22. 30% x 40% = _____
A) 0.12% B) 12% C) 120% D) 1200%

23. The positive difference between 5/6 and its reciprocal is _____.
A) 1/5 B) 1/6 C) 1/30 D) 11/30

24. Express 2.353535… as an improper fraction in simplest form.
A) 198/99 B) 233/99 C) 2 35/99 D) 47/20

25. Find the median of the prime numbers greater than 17 and less than 50.
A) 135/4 B) 31 C) 34 D) 37

Tiebreaker 1 Find x. $\frac{2^{10} \cdot 2^{10}}{2^9 \cdot 2^9} = 2^x$

Tiebreaker 2 $\frac{3 + 3 \cdot 3 – 3 \div 3 + 3}{2 + 2 \cdot 2 – 2 \div 2 + 2}$

Tiebreaker 3 Simplify $\frac{99!2010!}{100!2009!}$

Turn in the pink Scantron answer sheet to the monitor. You may keep the test.