Skyview Invitational Games for Mathematical Achievement
Mental Math – 2006-2007 ROUND 1

Correct ____x5=____
Skipped ____x1=____
Score: ____
Verify: ____

Name _____
School _____ Team #__
Division (circle one) Mu Alpha Theta

***DO NOT UNFOLD THIS SHEET***
***UNTIL TOLD TO BEGIN***

**Directions:** Do not turn this page until the proctor gives the signal to begin. **This is an 8 minute test with 40 problems**. ALL PROBLEMS MUST BE SOLVED MENTALLY. No calculations with pen and paper may be made. Write ONLY THE ANSWER in the space provided. No erasures may be made to an answer once written. Use a pen with blue or black ink. All problems require exact answers. Fractional answers must be given as improper fractions unless otherwise specified. Simplify all answers.
You will receive 5 points for every correct answer, 1 points for each question skipped, and 0 points for each incorrect question. Proceed accurately and quickly.

**Stop. Wait for signal to begin**

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1) $39^2$ _____

2) 74*13 + 26*13 _____

3) $11^3$ _____

4) $\log_2 7 * \log_{49} 8$ = (decimal) _____

5) What is the median of 16, 12, 18, 10, 19? _____

6) $2006_{11}$ = _____$_{10}$

7) $99^2$ _____

8) Smallest prime greater than 1000? _____

9) The GCD of 60 and 72 is? _____

10) The LCM of 60 and 72 is? _____

11) 2006*5 - 41 = _____

12) (61*52) ≡ x mod 3. What is the smallest positive value for x? _____

13) $0.\overline{200620062006}$ = (fraction) _____

14) MDCCLXXVI+CCXXX = (Roman numeral) _____

15) $\frac{1}{15}$ as a percentage (Mixed Number)

16) Gasoline once cost $0.78/gal. At 20 miles/gal, How much does it cost to go 110 miles? $_____

17) If $x^2-y^2=7$; $x^2+y^2=43$; then $|y|$=? _____

18) $16 * 16\frac{15}{16}$ = _____

19) Mean of first 4 digits of *e* (decimal): _____

20) 17+26+31+11 = _____

21) Simplify: $\sqrt{59x+9x}$

22) What is the sum of the solutions to $x^2+3x-5=0$? _____

23) Find the sum of the first 4 triangular numbers: _____

24) How many minutes are in 3 days? _____

25) Compute ${}_8C_3$ _____

26) Which is larger, $\frac{11}{13}$ or $\frac{23}{25}$ ? _____

27) $\log_z 729 = 3$. z =? _____

28) 237 – 732 = _____

29) 15% of 2006 (decimal) _____

30) If S=2, I=3, G=7, M=2, A=2; $S^2$IGMA= _____

31) 104 * 96 = _____

32) 2006 / 9 (mixed number) _____

33) $4\frac{1}{4} \div 1\frac{2}{3}$ (improper fraction) _____

34) Slope of line through (1,2) & (200,6) _____

35) Mean of 21, 22, 27, 29 (Mixed Num) _____

36) Y intercept of $y = x^2-4x+4$ _____

37) If 3 – 4 x > 27, then x< _____

38) 4th term in geometric sequence with first term 7 and common ratio $\frac{2}{7}$ ? _____

39) Sum of the squares of the solutions to $x^2+9x+18$? _____

40) How many positive odd numbers are less than 2006? _____