JR. HIGH MATH LEAGUE **GROUP 7-I TEST B**
Number Theory **Spring 2001**

One half point per answer

Label as T (true) or F (false).

1. 50 is a multiple of 10.
2. If a number is divisible by 15 then it is divisible by 3 and 5.
3. 2 and 3 are the only factors of 6.
4. The greatest common factor of 16 and 48 is 16.
5. An integer is divisible by 5 if the units digit is 0 or 5.
6. If a number is divisible by 6, then it is divisible by 12.

One point per problem

7. Find the next three terms: 1, 4, 9, 16, __, __, __.
8. Find the greatest common factor of 24, 44, and 84.
9. Suppose a planet has two hemispheres. On each hemisphere there are three continents. On each continent there are four countries. In each country there are five states. How many states are on the planet?
10. Find the prime factorization of 60. Write in exponential form.
11. How many positive 2 digit numbers are multiples of 3 and 5.
12. What is the mean: 32, 67, 55, 23, 23 ?
13. What is the mode: 32, 67, 55, 23, 23 ?
14. What is the median: 32, 67, 55, 23, 23 ?
15. Determine the largest single digit that will make the following true: 7_1 is divisible by 3.
16. How many composite numbers are less than 25?
17. What is the sum of the first 5 prime numbers?
18. What is the least positive integer with exactly 6 unique positive factors?
19. Given the following clues what is this mystery number: __ __ __
    Each digit is unique.
    The number is divisible by 3 and 9.
    The ones digit is eight times greater than the hundreds digit.
    The hundreds digit is one greater than the tens digit.
    The tens digit is neither positive nor negative.

Two points per problem

20. Find the greatest 4-digit number that has exactly three factors.
21. By selling cookies at $1.50 each, Jake made enough money to buy several cans of soda pop costing $0.40 each. If he had no money left over after buying the pop, what is the least number of cookies he could have sold?

School Name _____

JR. HIGH MATH LEAGUE **GROUP 7-I TEST B**

Number Theory **Spring 2001**

ANSWER SHEET

<u>One half point per answer</u>

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

<u>One point per problem</u>

7. _____, _____, _____

8. GCF = _____

9. _____ states

10. 60 = _____ × _____ × _____

11. _____

12. _____

13. _____

14. _____

15. 7_____1

16. _____

17. _____

18. _____

19. _____

<u>Two points per problem</u>

20. _____

21. _____ cookies