Bridge to Higher Math
D Term 2011
W. J. Martin
March 15, 2011

In-Class Worksheet

For each of the following, determine whether the sentence is

- a logical statement (or "proposition") (write "LS")

- a propositional function (write "PF")

- neither (write "N")

1. The integer 38 is even.

2. The integer -21 is even.

3. Is the integer $3^{18} - 3$ even?

4. It is not possible for $3^{18} - 3$ to be both even and odd.

5. The sum of x and y is 3.

6. The product of 4 and 5 is 16.

7. If the product of 4 and 5 is 20.

8. The lines $x = 0$ and $x = y$ intersect in one point.

9. Any two lines in the plane intersect in one point.

10. For any integer n, either $n = 0$ or $n^2 > 0$.

11. If the integer n is odd, is n^2 odd?

12. The number x must be either even or odd.

13. The product of $x + 1$ and $x - 1$ is $x^2 - 1$.

14. The integer $2^{859433} - 1$ is prime.

15. For any prime number p, the integer $2^p - 1$ is also prime.

16. For any positive integer n, the integer $2^{2^n} + 1$ is a prime.

17. If ℓ_1 and ℓ_2 are parallel lines, then any line m which intersects ℓ_1 also intersects ℓ_2.

18. $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

19. $A \cap (B - C) \cap D$