

Problem Set 2: Due Friday, April 3, 2009
Spring 2009

Math 190
Dr. Wiglesworth

Name: _____

You must *show all work* to receive full credit.

Answers and assertions must be fully explained and justified.

Your solutions must be clear, concise, and easy to follow.

You must cite any sources used for this assignment.

1. Page 356, number 17.

2. Prove: For all integers $n \geq 0$,

$$3^n \binom{n}{0} - 3^{n-1} \binom{n}{1} + 3^{n-2} \binom{n}{2} - 3^{n-3} \binom{n}{3} + \dots + (-1)^n \binom{n}{n} = 2^n.$$

3. Page 419, number 26.

4. Page 431, number 34.

5. Page 486, number 47.

6. Page 498, number 14.