MATH 10B
Section 211
GSI: Theo McKenzie

Quiz 2

Student:
SID:
Tue 2/5/19

True/False - No explanation needed. (For each: 1 point if correct, 0 points if not answered, -1 points if incorrect)

1. The symmetry of permutations can be seen in the identity $P(n,k) = P(n, n-k)$ for all integer n, k. True/False
2. The basic combinatorial relation satisfied by binomial coefficients that makes it possible to identify all numbers in Pascal's triangle as some binomial coefficients can be written as: $\binom{n-1}{k-1} + \binom{n-1}{k} = \binom{n}{k}$. True/False

Problems - Need justification.

1. How many numbers must be selected from $\{1, 2, 3, 4, 5, 6, 7, 8\}$ to guarantee that at least one pair of these numbers adds up to 9? (5 points)

2. What is the coefficient of x^7y^9 in $(3x - 2y)^{16}$? You don't need to write the actual integer. A formula will suffice. (5 points)