Name: _____

Pid: _____

1. Show that for any positive integer n, $\sum_{i=0}^{n} x^i = \frac{1-x^{n+1}}{1-x}$.

Solution:

2. Let $A_1, \ldots, A_n$, and B be some sets. Show that $\cup_{i=1}^{n}(A_i \cap B) = (\cup_{i=1}^{n} A_i) \cap B$.

Solution:

3. Show that $\sum_{i=1}^{n} \frac{1}{i(i+1)} = \frac{n}{n+1}$.

Solution: