Quiz 6: November 4, 2021

Name: _____

Student ID: _____

To remind you of the Brain-dead recipe for Inductive Steps:

1. Write down the LHS of P(n+1)

2. Rewrite LHS of P(n+1) to include LHS P(n)

3. Replace LHS of P(n) with RHS P(n)

4. Rewrite so RHS becomes RHS P(n+1)

1. (10 points) If $n \in$ the Integers, and $n \geq 0$, prove by Induction that

$$\sum_{k=0}^{n} i \cdot i! = (n+1)! - 1.$$

Clearly identify your Basis Case (2 points), your Inductive Step (6 points), and your Inductive Hypothesis (2 points).