Math266 Homework due Friday March 22

Prove the following results.

Result 1. There is no largest negative rational number.

Result 2. $\sqrt{3}$ is irrational.
Result 3. \( \forall n \in \mathbb{N} \), the sum of the first \( n \) odd numbers is
\[
\sum_{i=1}^{n} 2i - 1 = n^2
\]

Result 4. \( \forall n \in \mathbb{N} \),
\[
\sum_{i=1}^{n} i(i!) = (n + 1)! - 1
\]