Exercise 05 - Proofs

Create a txt file named '`exercises05.txt`' that proves each of the following statements.

1. $$\sum_{i=1}^{n} i^3 = \frac{n^2(n+1)^2}{4}$$

   (use induction)

2. $$\sum_{i=1}^{n} i^3 = \left(\sum_{i=1}^{n} i\right)^2$$

3. The sum of three consecutive integers is divisible by 3.

4. $\sqrt{3}$ is irrational.