

Exercise 05 - Proofs

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

1.

$$\sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$$

(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.