

► If needed, look at the LaTeX for this Exercise 38 for help with the LaTeX for Math Induction exercises.

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**Exercise.** A variant of Exercise 4.1.3c.

§4.1  
p180

Using math induction, prove that for each  $n \in \mathbb{N}$

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

Hint. See the Basic PMI example handout as well as the book's proof of Proposition 4.2 (p. 175-176).