1.4 Homework Problems

(3) Use induction to establish the formula

$$\sum_{i=1}^{n}(2i-1) = n^2$$

(6) Use induction to establish the formula

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

(13) Use induction to establish the assertion

$$(1+a)^n \geq 1 + na \qquad \text{for } a \geq 0 \text{ and } n \in \mathbb{N}$$