

Section 11.4: Mathematical Induction**Key Topics:** Principle of Mathematical Induction**THE PRINCIPLE OF MATHEMATICAL INDUCTION**

Let P_n be a statement that involves the n with the following two properties:

1. P_1 is true (the statement is true for the $n=1$).
2. P_k is a true statement, P_{k+1} is a true statement.

Then the statement P_n is true for every natural number n .

Find the statement P_{k+1} from the statement $P_k : k! < k^k$.