 Proof by induction scaffold

Question:

Initial statement

Step 1 – first case or base case

Prove the initial statement for the first natural number, for example,

Step 2

Assume that the statement is true for where is a natural number. Rewrite the statement by replacing with

Step 3 – inductive step

Prove the statement to be true for .

Write the initial statement by replacing with .

Use the statement from step 2 to prove the statement for

Step 4 – concluding statement