

Section 2.3: Proofs by Induction

Examples of inductive reasoning

1. 10, 20, 30, 40, 50,

2. 1, 1, 2, 3, 5, 8, 13, 21,

Steps to prove by induction

If $P(n)$ is an open sentence and:

Step 1:

Step 2:

Then $P(n)$ is true for all values of n .

Examples of proofs using induction

1. Prove using induction

$$1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$$