

- First list all the possibilities concerning the statement you want to prove.
- Then show that all but one of the possibilities leads to a contradiction of a true statement.
- You can then conclude that the remaining possibility must be a true statement.

Indirect proof by contradiction is often used in the workplace. A physician's assistant eliminates possible illnesses based on symptoms a patient does or does not have. A detective assumes each suspect committed the crime until the evidence shows otherwise. An auto repair technician troubleshoots the cause of an engine problem by testing all possible parts that could cause the problem.

EXAMPLE 2 An Indirect Proof

Brandon is the coach of a boy's soccer club. He is teaching the team to throw the ball in from out of bounds. When the ball goes out of bounds near mid-field, Roberto will throw the ball back into the field. Paul is closer to the field than Roberto.

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