

Name: \_\_\_\_\_

Date: \_\_\_\_\_

How can the conjecture: "All teenagers like music" be supported by inductive reasoning?

How can it be disproved?

Inductive reasoning cannot be used to prove a conjecture true. \_\_\_\_\_ is used to draw a specific conclusion through logical reasoning starting with general assumptions that are known to be valid.

**Example** Make some conclusions (deductions) given the following information:

- Ms. Langille likes kittens. Molly is a kitten, therefore, \_\_\_\_\_.
- Paulette lives in Medicine Hat.  
Medicine Hat is in Alberta, therefore, \_\_\_\_\_.
- Every animal has a heart. All dogs are animals, \_\_\_\_\_.
- If a triangle has two equal sides, then it has two equal angles.  $\triangle ABC$  has two equal sides.

**Example** All whole numbers are integers. 7 is a whole number, therefore: \_\_\_\_\_.

This is an example of the \_\_\_\_\_ property.

**Example** What is wrong with this example:

"All quarterbacks eat steak. Doug is the school quarterback. Thus, Doug eats steak."

**Proof**

**Theorem**



**Example** Prove the conjecture from an earlier lesson

“The difference between consecutive perfect squares is always an odd number”

Proof using Venn diagrams

**Exxample** Given: All gorillas are primates. All primates are mammals.

Consider: Grodd is a gorilla. What else can be deduced about Grodd?