

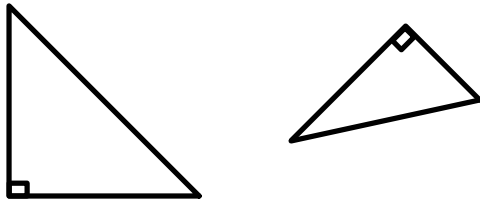
# Inductive Reasoning and Conjectures

Conjecture - An educated guess based on observations.

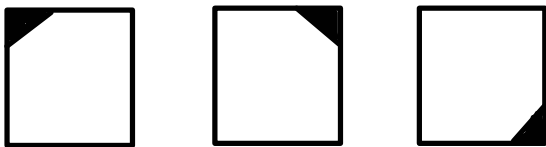
Given:  $\overline{AB} \cong \overline{CD}$  and  $\overline{CD} \cong \overline{EF}$

Counterexample - An example that shows that a conjecture is false.

All triangles are right.



Inductive Reasoning - The process of looking for patterns and making conjectures.



Directions: Determine if the conjecture is true or false based on the given information.

1. Given:  $AB = BC$ .

Conjecture:  $A$ ,  $B$  and  $C$  are collinear.

2. Given:  $ABCD$  is a rectangle.

Conjecture:  $AB = CD$  and  $AD = BC$ .

3. Given:  $\sphericalangle 1$  and  $\sphericalangle 2$  are complementary.

Conjecture:  $\sphericalangle 1 \cong \sphericalangle 2$ .

4. Given:  $\overline{AB} \cong \overline{BC} \cong \overline{CD}$ .

Conjecture:  $A$ ,  $B$ ,  $C$  and  $D$  are collinear.

5. Given:  $x$  is a prime number.

Conjecture:  $x$  is odd.

Directions: Write a conjecture based on the given information.

6.  $\angle ABC$  and  $\angle DBE$  are vertical angles.

7.  $\ell$  and  $m$  intersect to form right angles.

8.  $\angle ABC$  and  $\angle ABD$  form a linear pair.

9.  $ABCD$  is a rectangle.

10. In  $\triangle ABC$ ,  $\sphericalangle ABC$  is the angle bisector.

11. The product of  $(n-1)$  and  $(n+1)$ .