

## Lesson 2 - I

### Using Inductive Reasonings to Make Conjectures

**Find the next item in the pattern.**

**January, March, May, ...**

The next month is

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**Find the next item in the pattern.**

**7, 14, 21, 28, ...**

The next multiple is

**Find the next item in the pattern.**



The next figure is

When several examples form a pattern and you assume the pattern will continue, you are applying *inductive reasoning*. **Inductive reasoning** is the process of reasoning that a rule or statement is true because  . You may use inductive reasoning to draw a conclusion from a . A statement you believe to be true based on inductive reasoning is called a **conjecture**.

**Complete the conjecture.**

The sum of two positive numbers is ?.

*List some examples and look for a pattern.*

The sum of two positive numbers is

### Making a Conjecture

Complete each conjecture.

**A** The product of an even number and an odd number is ?.

List some examples and look for a pattern.

The product of an even number and an odd number is

### REFLECT

- 2a. Comment on the following conjecture: When an acute angle is copied so that the new angle is adjacent to the original angle, the resulting double angle is always obtuse.
- 2b. How many angles must you test in order to determine that the conjecture above is not always true?
- 2c. For what angle measure will an angle along with its adjacent copy form neither an acute nor an obtuse angle? Explain.

**Complete the conjecture.**

The product of two odd numbers is ?.

*List some examples and look for a pattern.*

The product of two odd numbers is

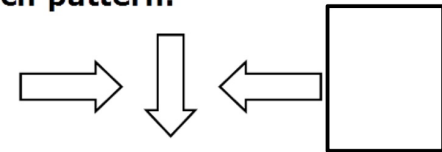
Write measures for several acute angles

Angle	1	2	3	4	5	6
Measure	70°					
Double Angle Measure	140°					

### Lesson Quiz

Find the next item in each pattern.

1. 0.7, 0.07, 0.007, ... 2.



**Determine if each conjecture is true. If false, give a counterexample.**

3. The quotient of two negative numbers is a positive number.
4. Every prime number is odd.
5. Two supplementary angles are not congruent.
6. The square of an odd integer is odd.