

1.1

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FOM 11

1.1 Making Conjectures: Inductive Reasoning

If the same result occurs over and over again, we may conclude that it will always occur. This kind of reasoning is called **inductive reasoning**.

Inductive reasoning can lead to a **conjecture**, which is a testable expression that is based on available evidence but is not yet proved.

(not true; it can be tested)

Example 1: Use inductive reasoning to make a conjecture about the product of an odd integer and an even integer.

$$7 \times 6 = 42$$

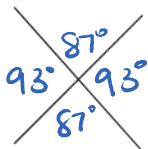
$$3 \times 10 = 30$$

$$9 \times 12 = 108$$

conjecture:

The product of an odd integer and an even integer is even.

Example 2: Make a conjecture about intersecting lines and the angles formed.



Conjecture:

opposite angles of intersecting lines are equal.

Example 3: Make a conjecture about the sum of two odd numbers.

$$7 + 3 = 10$$

$$-3 + 7 = 4$$

$$-21 + -3 = -24$$

$$5 + 3 = 8$$

Conjecture:

The sum of two odd numbers
is even.

Assignment: pg. 12 #3, 5, 6, 9, 10-12, 14, 16, 20 *optional*

