

**GEOMETRY
HONORS
CLASS NOTES**

Name: _____

Section: 2.1 & 2.2 Period: _____ Date: _____

Key Question: _____

Questions/ Main Ideas:

Warm-up:

1. The length of a square is 5cm. What is its width?
2. What is the sum of the first 5 counting numbers?

True or False?

3. If Tom lives in Reno, then he lives in Nevada.
4. If Tom lives in Nevada, then he lives in Reno.

Notes 2.1:

Activity 1 – Part II (textbook page 81)

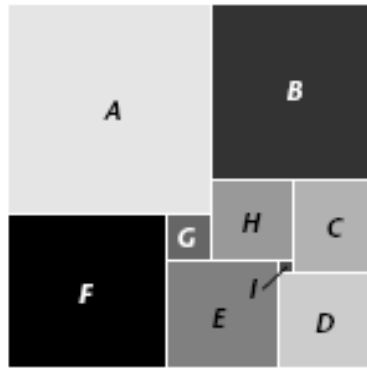
How can you find the sum of the first n counting numbers without actually adding them? Use the table below.

n	First n odd numbers	Sum of the first n odd numbers
1	1	1
2	1, 3	4
3	1, 3, 5	9
4	1, 3, 5, 7	16
5		
6		
n		

- The sum s of n odd counting numbers can be represented by the equation $s =$ _____.

Activity 1 – Part III (textbook page 81)

The figure on the next page is built entirely of squares. The area of square C is 64, and the area of square D is 81.



The whole figure at right (is/ is not) a square. (Circle one.)

- A _____ is a convincing argument that something is true. In mathematics you start with things that are agreed on called *postulates* or *axioms*. Then _____ is used to reach a conclusion.

Notes 2.2:

- A _____ is a statement that can be written in “if-then” form.
- The part following *if* is called the _____. The part following *then* is called the _____.

Example 1

Write “All cats are mammals” as a conditional statement.

Circle the hypothesis and underline the conclusion.

- The process of _____ reasoning, involves making logical arguments to reach logically certain conclusions.
- In logical notation, letters are used to represent the hypothesis and the conclusion of a conditional statement. The conditional “If p then q ” is written “ $p \rightarrow q$.”
- The _____ of a conditional is formed by interchanging the hypothesis and the conclusion.

Conditional: $p \rightarrow q$

Converse: $q \rightarrow p$

- The converse of a true conditional statement may be true or false. A conditional statement is false if you can find one example, called a _____, for which the hypothesis is true and the conclusion is false.

Example 2

The statement “If a person lives in San Antonio, then he or she lives in Texas” is true. Circle the hypothesis; underline the conclusion, and write the converse of the statement. If the converse is false, give a counterexample.

- Conditional statements can sometimes be linked together to in a logical _____.
- A conditional can be derived from the logical _____ using the *If-Then* Transitive Property:
When you are given “If *A*, then *B*” and “If *B*, then *C*,” you can conclude “If *A*, then *C*.” This can also be written as “If $A \rightarrow B$ and $B \rightarrow C$, then $A \rightarrow C$.”

Example 3

Arrange the statements in a logical chain. Write the conditional that follows.

- If it is cold, I can go ice skating.
- If it is March, then the wind is blowing.
- If the wind is blowing, then it is cold.

Activity – Towers of Hanoi

There is a legend about a Vietnamese temple which contains a large room with three time-worn posts in it surrounded by 64 golden disks. The monks of Hanoi, acting out the command of an ancient prophecy, have been moving these disks, in accordance with the rules of the puzzle, since that time. The puzzle is therefore also known as the Tower of Brahma puzzle. According to the legend, when the last move of the puzzle is completed, the world will end.

If each move takes the monks one second and they make no mistakes and they start today, when will the world end?

Summary: _____
