

Geometry

2.2 Use Inductive Reasoning

Conjecture and Inductive Reasoning

Conjecture

- _____ statement based on _____

Inductive Reasoning

- First find a _____ in _____ cases
- Second write a _____ for the _____ case

Sketch the fourth figure in the pattern



Describe the pattern in the numbers 1000, 500, 250, 125, ... and write the next three numbers in the pattern

Given the pattern of triangles below, make a conjecture about the number of segments in a similar diagram with 5 triangles



Make and test a conjecture about the product of any two odd numbers

Proving by Inductive Reasoning

The only way to show that a conjecture is true is to _____

To show a conjecture is false is to show _____ where it is false

- This case is called a _____

Find a counterexample to show that the following conjecture is false

The value of x^2 is always greater than the value of x

Deductive Reasoning

Use _____, _____, _____, _____ to form an argument.

Deductive reasoning

- _____ true
- _____ → _____

Inductive reasoning

- _____ true
- _____ → _____

Laws of Logic

Law of Detachment

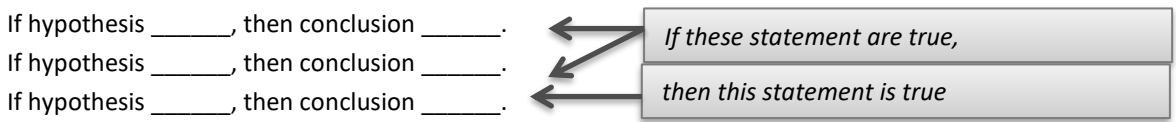
If the _____ of a true conditional statement is _____, then the _____ is also _____.

Detach means _____, so the 1st statement is _____.

1. If **we confess our sins**, he is faithful and just to forgive us our sins. 1 John 1:9
2. **Jonny confess our sins**
3. God is faithful and just to forgive Jonny our sins

1. If you love me, keep my commandments.
 2. I love God.
 3. _____
-
1. If you love me, keep my commandments.
 2. I keep all the commandments.
 3. _____

Law of Syllogism



1. If we confess our sins, **He is faithful and just to forgive us our sins**.
2. **If He is faithful and just to forgive us our sins**, then we are blameless.
3. If we confess our sins, then we are blameless.

1. If you love me, keep my commandments.
 2. If you keep my commandments, you will be happy.
 3. _____
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1. If you love me, keep my commandments.
 2. If you love me, then you will pray.
 3. _____

Assignment: 78 #2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 22, 24, 26, 30, 32, 34, 36, 40, 43, 45, 46, 49, 51, 54 = 25 total