Draw a conclusion based off the scenarios below. Your conclusion should be in the form of an "If…, then…" statement. ☺

1. If you clean your room, your parents will let you go to the party. $c \to p$

   If you go to the party, then you will meet the person of your dreams. $p \to d$

   If you meet the person of your dreams, you will have a date for homecoming! $d \to h$

   What can you conclude? $c \to h$

   *If you clean your room, then you will have a date for home coming!*

2. If I go to football practice every day, then I will get stronger. $p \to s$

   If I get stronger, then I will be able to play in the game on Friday. $s \to F$

   If I get to play in the game on Friday, then I will score a touchdown. $F \to t$

   If I score a touchdown, then my team will win. w $t \to w$

   What can you conclude? $p \to w$

   If I go to Football practice every day, then my team will win!

3. If it continues to rain, then the soccer field will become muddy. $r \to m$

   If the game is canceled, then I will have extra time to study for Geometry. $c \to s$

   If I ace the next test, then my mom will buy my ice cream. $a \to b$

   If the soccer field becomes muddy, then the game will be canceled. $m \to c$

   If I have extra time to study for Geometry, then I will ace the next test. $s \to a$
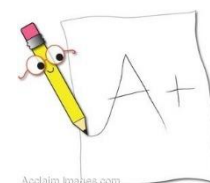
   What can you conclude? How did you decide on the appropriate order of the statements?

   $r \to m$
   $m \to c$
   $c \to s$
   $s \to a$
   $a \to b$

   If it continues to rain, then my mom will buy me ice cream ☺

- Allows you to draw conclusions from two conditionals statements when the <u>conclusion</u> of one is the <u>hypothesis</u> of the other.
- The connecting statement needs to be the <u>Conclusion</u> of one statement and the <u>hypothesis</u> of the next.

4. If I get all my <u>homework</u> done tonight, then my mom will let me go see a <u>movie</u>.

   H → M

   If I go see a <u>movie</u> tonight, then I'll want to buy some <u>popcorn</u>.

   M → P

   I spill my soda on the person in front of me, I'll get <u>kicked</u> out of the movie theater.

   S → K

   If I buy a <u>soda</u>, I'll <u>spill</u> it on the person sitting in front of me.

   B → S

   If I get <u>kicked</u> out of the movie theater, my mom will <u>ground</u> me.

   K → G

   If I buy some <u>popcorn</u>, I'll want to <u>buy</u> a soda, too.

   P → B

   What can you conclude?

   If I got all my HW done tonight, then my mom will ground me. :)

   H → M
   M → P
   P → B
   B → S
   S → K
   K → G

NOW LET'S TRY A FEW MATH EXAMPLES!

Determine if a conjecture is <u>valid</u> the Law of Syllogism.

1. Given: If <u>$m\angle A < 90°$</u>, then <u>$\angle A$ is acute</u>. If <u>$\angle A$ is acute</u>, then it is <u>not a right angle</u>.

   m → a   a → ~r

   Conjecture: If $m\angle A < 90°$, then it is not a right angle.

   (Valid) or Invalid? Correction if invalid _____

   $m → a$
   $a → ~r$
   _____
   $m → ~r$

2. Given: If a <u>number</u> is divisible by 2, then it is even. If a number is <u>even</u>, then it is an integer.

   n → e   e → I

   Conjecture: If a number is an integer, then it is divisible by 2.

   Valid or (Invalid)? Correction if invalid __If a # is ÷ by 2, then it is an integer.__

   $n → e$
   $e → I$
   _____
   $n → I$

3. Given: If two angles form a linear pair, then they are adjacent. If two angles are adjacent, then they share a side.

   L.P → a
   a → s

   Conjecture: If two angles form a linear pair, then they are adjacent.

   (Valid) or Invalid? Correction if invalid _____