1. What is the benefit of using menus in a call system?

(A call system is what is used when you call a business and they ask if you want to speak to a certain department to press a number.)

2. Suppose the recorded directions say,

> ***"If you would like to speak to a representative, press zero now."***

What are the two parts of this sentence?

3. What are possible limitations of using a menu in a call system?

Unit 2A: Reasoning and Proof

Geometry
September 9th

Conditional Statements

HW: Who Caught the Ball WS

Objectives:

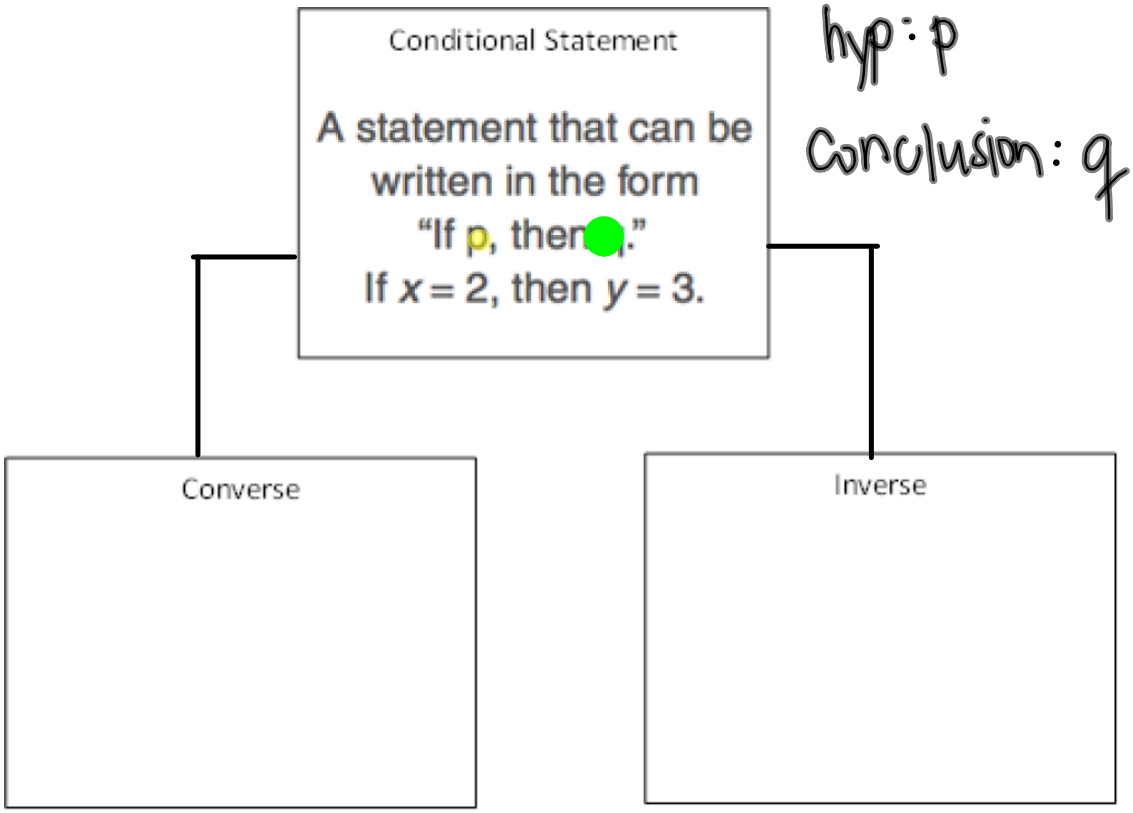
- Analyze statements in if-then form
- Write the converse of if-then statements

Logical Arguments

Logical Arguments consist of a set of premises and a conclusion.

Premises

Mr. French is the only calculus teacher.
Mr. French, Ms. Anderson, Ms. Allen , and Ms. Short teach pre-calculus.



hyp: p

Conclusion: q

Conditional Statements

Conditional statements consist of a hypothesis (the if) and a conclusion (the then).

Example:

If I take calculus, then Mr.French is my teacher.

Hypothesis: I take calculus T

Conclusion: Mr. French is my teacher

Example 2:

Identify the hypothesis and conclusion of each statement.

a. If a polygon has 6 sides, then it is a hexagon.

Hypothesis: a polygon has 6 sides; Conclusion: it is a hexagon

b. Tamika will advance to the next level of play if she completes the maze in her computer game.

Hypothesis: Tamika completes the maze in her computer game;
Conclusion: she will advance to the next level of play

Example 3:

Identify the hypothesis and conclusion of each conditional statement. The write each statement in if-then form.

a. Measured distance is positive.

b. A five-sided polygon is a pentagon.

Conditional Statement

A statement that can be written in the form

"If p, then q."

If x = 2, then y = 3.

Converse

A statement made by switching the hypothesis and the conclusion.

"If q, then p."

If y=3, then x = 2

Inverse

Example: Converse

If Mr. French is my teacher, then I take calculus.

Truth Value: True or False? .

$x+3=6$
$-3 \quad -3$

Conditional Statement

A statement that can be written in the form

"If p, then q."

If x = 2, then y = 3.

Converse

A statement made by switching the hypothesis and the conclusion.

"If q, then p."

If y=3, then x = 2

Inverse

A statement made by negating the hypothesis and the conclusion.

"If not p, then not q."

If $x \neq 2$, then $y \neq 3$

Example: Converse

If I do not take Calculus, then Mr. French is not my teacher.

Truth Value: True or False?

Amy is the starting pitcher for her high school softball team. If she is elected by the district coaches, she will make the All-Star Team. If she makes the All Star Team, she has been elected by the district coaches.

hyp: Amy is elected by the district coaches
concl: Amy makes the All-Star team

p → q: If amy is elected by the district coaches, then she makes the all star team. (implies) T

q → p: If Amy made the All-Star Team, then she was elected by the district coaches. (converse) T

In this case, both the conditional and its converse are true. The conjunction of the two statements is called a ***biconditional.***

Amy will only make the All-Star team if -and-only-if she is elected by the district coaches.

$p \rightarrow q$ $p \leftrightarrow q$ p iff q