

Mental Floss - Monday Oct 17th
 A point is located at $A(4,2)$. When adding the x and y values of that point, we get $4 + 2 = 6$. Which of the following transformations gives you a new coordinate with the largest sum of x and y ?

- a.) Rotate 90° CW around origin $(2,-4)$ (-2)
- b.) Reflect over x -axis $(4,-2)$ (2)
- c.) Translate along vector $\langle -5,-1 \rangle$ $(-1,1)$
- d.) Reflect over y -axis $(-4,2)$ (-2)

Logic Statements (21)

- If today is Saturday, then it is the weekend.
- If it is raining, then the grass is wet.
- If it is a Monday, then I do not want to wake up.

Discuss what all three of these statements have in common.

If Then
 p q

Conditional Statement

If = Hypothesis (p) Then = Conclusion (q)
 "What you know" "What you can conclude"

Words:	If p , then q
Symbols:	$p \rightarrow q$

Negation

The **negation** of a statement is the **opposite** of the original statement (p or q). To write the negation of a statement, you write the symbol for negation (\sim) before the letter.

Words:	not p	<u>Example:</u>
Symbols:	$\sim p$	r It is raining
		$\sim r$ It is not raining

Negation Examples

Write the negation of each statement.

- The grass is green.

THE GRASS IS NOT GREEN.

- The shoes are not red.

* THE SHOES ARE RED.

Logic Statements

Theorems = Statements that have been proven true.

Definitions = Statements that describe what something is and are always true.

Statements of Logic and Notation

Conditional	$p \rightarrow q$ (If p , then q)	
Converse	$q \rightarrow p$	FLIP!!
Inverse	$\sim p \rightarrow \sim q$	NOT!!
Contrapositive	$\sim q \rightarrow \sim p$	FLIP and NOT!!