

Pick Up The Warm Up

only do the front side



$avb \Rightarrow c$

a	b	c	avb	c	$(avb) \Rightarrow c$
T	T	T	T	T	T
T	T	F	T	F	F
T	F	T	T	T	T
T	F	F	T	F	F
F	T	T	T	T	T
F	T	F	T	F	F
F	F	T	F	T	T
F	F	F	F	F	T

$a \Rightarrow b \wedge c$

a	b	c	a	$b \wedge c$	$a \Rightarrow (b \wedge c)$
T	T	T	T	T	T
T	T	F	T	F	F
T	F	T	T	F	F
T	F	F	T	F	F
F	T	T	F	T	T
F	T	F	F	F	T
F	F	T	F	F	T
F	F	F	F	F	T

We will not be studying the next part of Logic, *linking implications together to form argument*. If you go to law school, you will !!

strawman: Misrepresenting or exaggerating someone's argument to make it easier to attack.

false cause: Presuming that a real or perceived relationship between things means that one is the cause of the other.

slippery slope: Asserting that if we allow A to happen, then Z will consequently happen too, therefore A should not happen.

ad hominem: Attacking your opponent's character or personal traits instead of engaging with their argument.

special pleading: Moving the goalposts or making up exceptions when a claim is shown to be false.

loaded question: Asking a question that has an assumption built into it so that it can't be answered without appearing guilty.

the gambler's fallacy: Believing that "runs" occur to statistically independent phenomena such as roulette wheel spins.

bandwagon: Appealing to popularity or the fact that many people do something as an attempted form of validation.

appeal to authority: Using the opinion or position of an authority figure, or institution of authority, in place of an actual argument.

composition /division: Assuming that what's true about one part of something has to be applied to all, or other, parts of it.

no true scotsman: Making what could be called an appeal to purity as a way to dismiss relevant criticisms or flaws of an argument.

genetic: Judging something good or bad on the basis of where it comes from, or from whom it comes.

black-or-white: Where two alternative states are presented as the only possibilities, when in fact more possibilities exist.

begging the question: A circular argument in which the conclusion is included in the premise.

appeal to nature: Making the argument that because something is "natural" it is therefore valid, justified, inevitable, or ideal.

anecdotal: Using personal experience or an isolated example instead of a valid argument, especially to dismiss statistics.

the texas sharpshooter: Cherry-picking data clusters to suit an argument, or finding a pattern to fit a presumption.

middle ground: Saying that a compromise, or middle point, between two extremes is the truth.

appeal to emotion: Manipulating an emotional response in place of a valid or compelling argument.

the fallacy fallacy: Presuming that because a claim has been poorly argued, or a fallacy has been made, that it is necessarily wrong.

tu quoque: Avoiding having to engage with criticism by turning it back on the accuser - answering them with criticism.

personal incredulity: Saying that because one finds something difficult to understand that it's therefore not true.

burden of proof: Saying that the burden of proof lies not with the person making the claim, but with someone else to disprove.

ambiguity: Using double meanings or ambiguities of language to mislead or misrepresent the truth.

thou shalt not commit logical fallacies

Prove DeMorgan's 2nd Law
negating an "AND" statement

$$\neg(p \wedge q) = \neg p \vee \neg q$$

P	q				$\neg(p \wedge q)$	$\neg p \vee \neg q$
T	T					
T	F					
f	T					
F	F					

P	q	$\neg p$	$\neg q$	$p \wedge q$	$\neg(p \wedge q)$	$\neg p \vee \neg q$
T	T	F	F	T	F	F
T	F	F	T	F	T	T
f	T	T	F	F	T	T
F	F	T	T	F	T	T

Tomorrow

Start Paper 2 (two questions / group of 3)

Monday.... Review Logic/Finance ~~AM~~

Tuesday.... Quiz on Logic/Finance ←

Check
Assign
3

p. 509

EXERCISE 15F

1 Write the converse and inverse for:

a If $5x - 2 = 13$, then $x = 3$.

(a) If $x = 3$ then $5x - 2 = 13$.
if $5x - 2 \neq 13$, then $x \neq 3$

d If a figure is a parallelogram, then its opposite sides are equal in length.

If a figure has opp sides equal in length, then the figure is a parallelogram.

If a figure is not a par, then then opp sides are not =

3 Write down the contrapositives of these statements:

a All rose bushes have thorns.

same as:

If a plant is a rose bush, then it has thorns.

Contrapositive:

If a plant does not have thorns, then it is not a rose bush

c No good soccer player has poor kicking skills.

Same as:

If a soccer player is no good, then they have poor kicking skills.

contrapositive:

If a soccer player does not have poor kicking skills, then the player is not a bad player.

e If a person is fair and clever then the person is a doctor.

Contrapositive:

If a person is not a doctor, then the person is not fair nor clever.

5 Write down the contrapositive of:

b x is a number ending in 2 \Rightarrow x is even

if x is odd, then x is not a number ending in 2.

pg 504 15C..... 3c

3 Use deMorgan's properties to find the negation of:

c $x < -1$ or $x > 7$

$$\neg(p \wedge q) = \neg p \vee \neg q$$

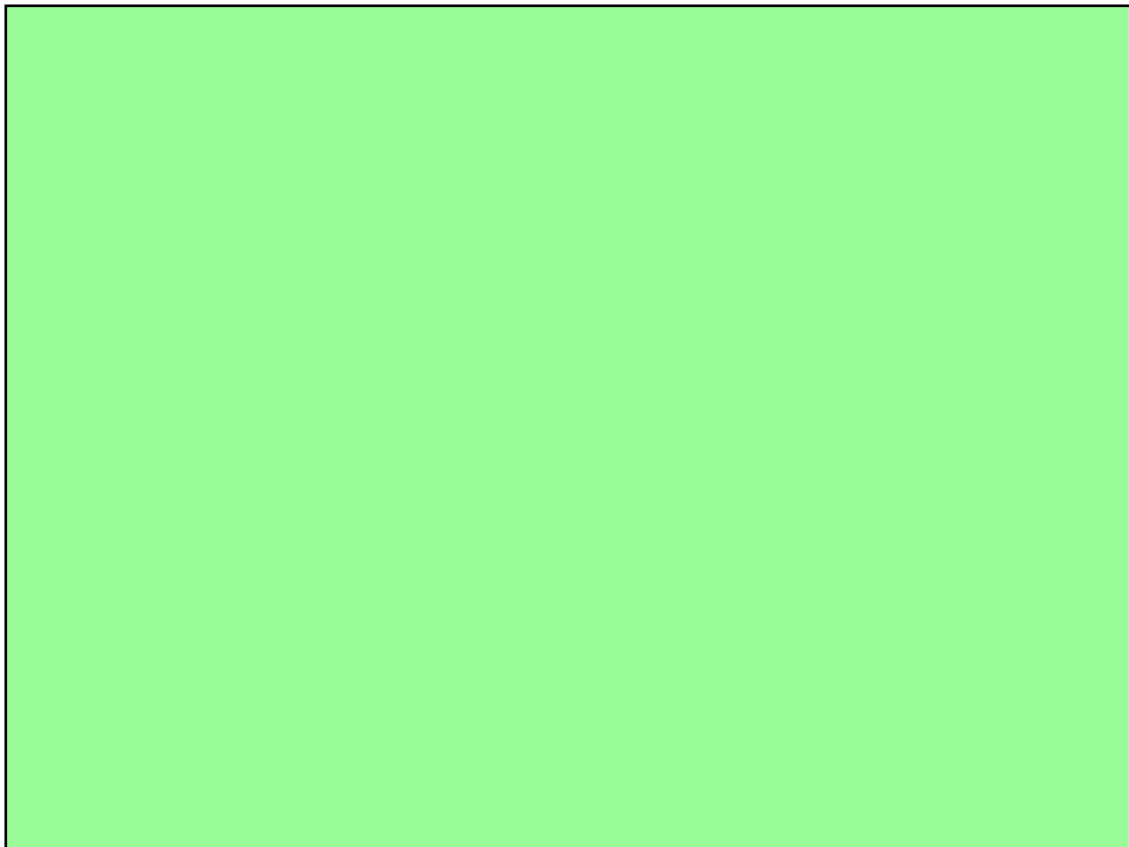
$$\neg(p \vee q) = \neg p \wedge \neg q$$

negation

$$x \geq -1 \text{ and } x \leq 7$$

$p \vee (\neg p \wedge q)$

p	q	$\neg p$	$\neg p \wedge q$	$p \vee (\neg p \wedge q)$
T	T	F	F	T
T	F	F	F	T
F	T	T	T	T
F	F	T	F	F



What would be the issues with setting up a truth table for the following compound proposition?

$$\neg P \vee (q \wedge r)$$

AIM ●

Three Proposition
Truth Tables

will also be set up in a standard way

P	q	r		$\neg p \vee (q \wedge r)$
.				

P	q	r	$\neg p$	$q \wedge r$	$\neg p \vee (q \wedge r)$
T	T	T	F	T	T
T	T	F	F	F	F
T	F	T	F	F	F
T	F	F	F	F	F
F	T	T	T	T	T
F	T	F	T	F	T
F	F	T	T	F	T
F	F	F	T	F	T

P	q	r	$\neg p$	$q \wedge r$	$\neg p \vee (q \wedge r)$
T	T	T			
T	T	F			
T	F	T			
T	F	F			
F	T	T			
F	T	F			
F	F	T			
F	F	F			

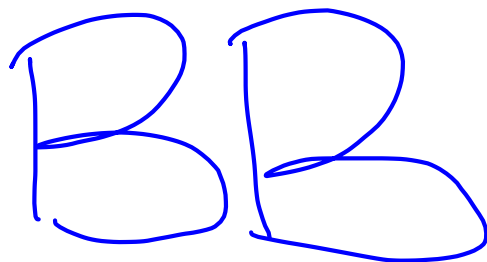
Construct a truth table for

$$(p \vee q) \vee (p \wedge \neg r)$$

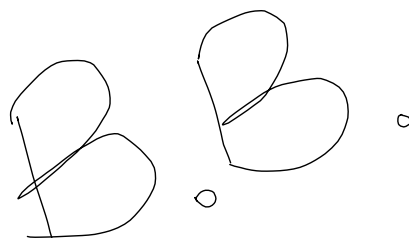
p	q	r		$(p \vee q) \vee (p \wedge \neg r)$
<p>How many additional columns?</p>				

p	q	r	$\neg r$	$(p \vee q)$	$(p \wedge \neg r)$	$(p \vee q) \vee (p \wedge \neg r)$
T	T	T	F	T	F	T
T	T	F	T	T	T	T
T	F	T	F	T	F	T
T	F	F	T	T	T	T
F	T	T	F	T	F	T
F	T	F	T	T	T	T
F	F	T	F	F	F	F
F	F	F	T	F	T	T

Linking implications to form arguments



a la Monty Python



- a) Last two questions of Sequence Quiz
- b) LCQ on Logic

in your group

After that:

Assignment due Tuesday but you will have some time in class on Monday:

Finance Review

→ Add to HW packet