

Sec 2.3

#2 "1 - 0.999..." is less than every positive number.

#4 ∴ This figure is not a quadrilateral.

#6 (NOT assigned)

p	q	r	$\neg q$	premises			conclusion
				$p \vee q$	$p \rightarrow \neg q$	$p \rightarrow r$	r
T	T	T	F	T	F	T	
T	T	F	F	T	F	F	
T	F	T	T	T	T	T	T
T	F	F	T	T	T	F	
F	T	T	F	T	T	T	T
F	T	F	F	T	T	T	F
F	F	T	T	F	T	T	
F	F	F	T	F	T	T	

← X

The given argument form is NOT valid. In the case that q is True and p and r are false, the premises are all true but the conclusion is false.

Sec 2.3 # 11

p	q	r	q ∨ r	premises		conclusion
				$p \rightarrow (q \vee r)$	$\neg q \vee \neg r$	$\neg p \vee \neg r$
T	T	T	T	T	F	F
T	T	F	T	T	T	T
T	F	T	T	T	F	F
T	F	F	F	F	T	F
F	T	T	T	T	F	F
F	T	F	T	T	T	T
F	F	T	T	T	T	T
F	F	F	F	T	T	T

This argument is not valid. In the case that p and r are True and q is False, the premises are True, but the conclusion is False.

12b

p	q	premises		conclusion
		$p \rightarrow q$	$\neg p$	$\neg q$
T	T	T	F	F
T	F	F	F	F
F	T	T	T	F
F	F	T	T	T

This argument is not valid. In the case that p is False and q is True, the premises are True but the conclusion is False.

Sec 2.3 #24 (NOT assigned)

$$\begin{array}{l} p \rightarrow q \\ q \\ \hline \therefore p \end{array}$$

This argument is NOT VALID.
It is the Converse Error.

$$\begin{array}{l} \#26 \quad p \rightarrow q \\ \quad q \rightarrow r \\ \hline \therefore p \rightarrow r \end{array}$$

This argument is valid
by Transitivity

$$\begin{array}{l} \#29 \quad p \rightarrow q \\ \quad \sim p \\ \hline \therefore \sim q \end{array}$$

This is NOT Valid.
It is the INVERSE
ERROR.

$$\begin{array}{l} \#30 \quad p \rightarrow q \\ \quad q \\ \hline \therefore p \end{array}$$

This is NOT Valid.
It is the CONVERSE ERROR.