

Geometry: Truth Tables

Name: _____

Complete the following truth tables...

1)

p	q	$\sim p$	$\sim q$	$p \rightarrow q$	$\sim q \rightarrow \sim p$
T	T				
T	F				
F	T				
F	F				

2)

p	q	$\sim p$	$\sim q$	$q \rightarrow p$	$\sim p \vee q$

3)

p	q	$\sim p$	$\sim q$	$\sim p \wedge \sim q$	$\sim p \vee \sim q$

4)

p	q	$\sim p$	$\sim q$	$p \vee \sim q$	$\sim p \wedge q$

5)

p	q	$\sim p$	$\sim q$	$\sim p \rightarrow \sim q$	$\sim p \vee q$	$\sim q \wedge \sim p$

6)

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

7) Let s represent “You succeed.”
 Let t represent “You try again.”

Sentences:

If you don’t succeed, then you try again.”

You succeed or you try again.

s	t			

8) Let n represent “Mrs. Dreyer is a nurse.”
 Let m represent “Mrs. Dreyer is a microbiologist.”

Sentences:

If Mrs. Dreyer is a nurse, then she isn’t a microbiologist.

If Mrs. Dreyer is not a microbiologist, then she is a nurse.

n	m			

Geometry: Truth Tables Answer Key

Name: _____

Complete the following truth tables...

1)

p	q	$\sim p$	$\sim q$	$p \rightarrow q$	$\sim q \rightarrow \sim p$
T	T	F	F	T	T
T	F	F	T	F	F
F	T	T	F	T	T
F	F	T	T	T	T

2)

p	q	$\sim p$	$\sim q$	$q \rightarrow p$	$\sim p \vee q$
T	T	F	F	T	T
T	F	F	T	T	F
F	T	T	F	F	T
F	F	T	T	T	T

3)

p	q	$\sim p$	$\sim q$	$\sim p \wedge \sim q$	$\sim p \vee \sim q$
T	T	F	F	F	F
T	F	F	T	F	T
F	T	T	F	F	T
F	F	T	T	T	T

4)

p	q	$\sim p$	$\sim q$	$p \vee \sim q$	$\sim p \wedge q$
T	T	F	F	T	F
T	F	F	T	T	F
F	T	T	F	F	T
F	F	T	T	T	F

5)

p	q	$\sim p$	$\sim q$	$\sim p \rightarrow \sim q$	$\sim p \vee q$	$\sim q \wedge \sim p$
T	T	F	F	T	T	F
T	F	F	T	T	F	F
F	T	T	F	F	T	F
F	F	T	T	T	T	T

6)

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

9) Let s represent “You succeed.”
Let t represent “You try again.”

Sentences:

If you don’t succeed, then you try again.”

You succeed or you try again.

s	t	$\sim s$	$\sim s \rightarrow t$	$s \vee t$
T	T	F	T	T
T	F	F	T	T
F	T	T	T	T
F	F	T	F	F

7) Let n represent “Mrs. Dreyer is a nurse.”
Let m represent “Mrs. Dreyer is a microbiologist.”

Sentences:

If Mrs. Dreyer is a nurse, then she isn’t a microbiologist.

If Mrs. Dreyer is not a nurse, then she is a microbiologist.

n	m	$\sim n$	$\sim m$	$n \rightarrow \sim m$	$\sim n \rightarrow m$
T	T	F	F	F	T
T	F	F	T	T	T
F	T	T	F	T	T
F	F	T	T	T	F