

//Matthew McMillian

12.

- a. If you have the flu then you will miss the final examination
- b. You will not miss the examination if and only if you pass the course
- c. If you miss the final examination then you will not pass the course
- d. You have the flu or you have missed the final examination or you passed the course
- e. If you have the flu then you didn't pass the course or if you missed the final examination then you didnt pass the course
- f. You have the flu and missed the final examination or you didnt miss the examination and you passed the course

//p: A on final exam

//q: You do every exercise

//r: You get an A in the class

14.

- a. $r \wedge \neg q$ (contingency)
- b. $p \wedge q \wedge r$ (contingency)
- c. $r \ll p$ (contingency)
- d. $(p \wedge \neg q) \vee r$ (contingency)
- e. $(p \wedge q) \rightarrow r$ (contingency)
- f. $r \ll (q \vee p)$ (contingency)

16.

- a. True
- b. False
- c. True
- d. True

18.

- a. False
- b. False
- c. True
- d. True

32.

d.

p	q	$p \wedge q$	$p \vee q$	$(p \wedge q) \rightarrow (p \vee q)$	(contingency)
t	t	t	t	t	
t	f	f	t	t	
f	t	f	t	t	
f	f	f	f	f	

e.

p	q	$\neg p$	$q \rightarrow \neg p$	$p \ll q$	$(q \rightarrow \neg p) \ll (p \ll q)$	(contingency)
t	t	f	f	t	f	
t	f	f	t	f	f	
f	t	t	t	f	f	
f	f	t	t	t	t	