Quiz 6   Name: _____Key_____

You must show your work to get full credit.

1. Let P, Q, and R be the following statements.

   P: Blaine studied hard.

   Q: Blaine got an A on the exam.

   R: Blaine spent the night before the exam in Five Points.

   Express the following sentences in terms of P, Q, $\vee$, $\wedge$, and $\sim$.

   (a) Blaine did not study hard, but still got an A on the exam.

   $$\sim P \wedge Q$$

   (b) Blaine got an A on the exam, despite spending the previous night in Five Points.

   $$Q \wedge R$$

   (c) Blaine will either study hard or spend the night in Five Points, but not both.

   $$(Q \vee R) \wedge (\sim(Q \wedge R))$$

2. Make a truth table for $(P \vee Q) \wedge (\sim(P \wedge Q))$.

P	Q	$P \vee Q$	$P \wedge Q$	$\sim(P \wedge Q)$	$(P \vee Q) \wedge (\sim(P \wedge Q))$
T	T	T	T	F	F
T	F	T	F	T	T
F	T	T	F	T	T
F	F	F	F	T	F