Beginning Activities for Section 2.1

Mathematical Reasoning: Writing and Proof, Version 3

Beginning Activity 1 (Compound Statements)

1. (**a**) $P \wedge Q$: 15 is odd and 15 is prime. This statement is false since the statement Q is false.

(**b**) $P \vee Q$: 15 is odd or 15 is prime. This statement is true since the statement P is true.

(**c**) $P \wedge \neg Q$: 15 is odd and 15 is not prime. This statement is true since both P and $\neg Q$ are true.

(**d**) $\neg P \vee \neg Q$: 15 is even or 15 is not prime. This statement is true since $\neg Q$ is true.

2. (**a**) $\neg R$

(**b**) $P \vee \neg R$

(**c**) $\neg P \vee R$

(**d**) $P \wedge \neg R$

Beginning Activity 2 (Truth Values of Statements)

According to the definitions and conventions that were discussed in Beginning Activity 1:

1. Statements (a), (b), and (c) are true. Statement (d) is false.

2. Only statement (b) is true. The others are false.

3. Statements (b), (c), and (d) are true. Statement (a) is false.

4. Statements (c) and (d) are true. Statemenst (a) and (b) are false.
