

Show all work clearly and in order. Please box your answers. 10 minutes.
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1. Let $A = \{0, 1, 2\}$, $B = \{2, 3\}$ and $\mathcal{U} = \{0, 1, 2, 3, 4\}$.
 - (a) $A^c = \{3, 4\}$
 - (b) $A \cap B = \{2\}$
 - (c) $A \cup B = \{0, 1, 2, 3\}$
 - (d) $A \setminus B = \{0, 1\}$
 - (e) $B \setminus A = \{3\}$
 - (f) $A \Delta B = \{0, 1, 3\}$
 - (g) $\mathcal{P}(B) = \{\emptyset, \{2\}, \{3\}, \{2, 3\}\}$
2. Use truth tables to verify the validity of the following argument form:

$$p \rightarrow r$$

$$q \rightarrow r$$

$$p \vee q$$

$$\therefore r$$

See the solution to problem 3 in section 1.5.