

1. Which of the following propositions is the converse of $\neg p \rightarrow q$?

(3 points)

A. $\neg q \rightarrow p$

B. $\neg q \rightarrow \neg p$

✓ C. $q \rightarrow \neg p$

D. $p \rightarrow \neg q$

2. Which of the following propositions is a **tautology**?

(3 points)

- A. $(p \text{ OR } q) \text{ AND } (\text{NOT } p)$
- ✓ B. $(p \text{ OR } q) \text{ OR } (\text{NOT } p)$
- C. $(p \text{ AND } q) \text{ AND } (\text{NOT } q)$
- D. $(p \text{ OR } q) \text{ AND } (\text{NOT } q)$

3. Which of the following is **true** given the following propositions $p: t \rightarrow u$ and $q: \neg t \text{ OR } u$.

(3 points)

- A. p does not logically imply q
- B. q does not logically imply p
- ✓ C. p and q are logically equivalent
- D. none of the above are true