

# Discrete Math Homework 3

noflowerzzk

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## 1 Answer\_1

Noting that

$$q \oplus r \equiv (\neg q \wedge r) \vee (q \wedge \neg r)$$

We have

$$\phi \equiv \neg(p \wedge \neg(q \oplus r)) \equiv \neg(p \wedge \neg((\neg q \wedge r) \vee (q \wedge \neg r))) \equiv \neg p \vee \neg \neg((\neg q \wedge r) \vee (q \wedge \neg r)) \equiv \neg p \vee (\neg q \wedge r) \vee (q \wedge \neg r)$$