

Discrete Math HW 3: Learning goal P1

P1: I can write an appropriate proof outline for a given propositional logic formula.

Exercise 1 Write an outline for a proof of $P \rightarrow (Q \wedge R)$.

Exercise 2 Write an outline for a proof of $P \leftrightarrow \neg Q$.

Exercise 3 Write an outline for a proof of $\forall x:D. P(x) \wedge Q(x)$.

Exercise 4 Write an outline for a proof of $\exists n:D. P(n) \rightarrow Q(n)$. Use a proof by contrapositive for the implication.

Exercise 5 Prove: for all integers m and n , if mn is even, then either m is even or n is even (or both).

Exercise 6 Prove: for any positive integer n , n is even if and only if $7n + 4$ is even.