1.

p ^ q

p → (r ^ q)

r → (s v t)

¬s

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∴ t

p ^ q Given

(r ^ q) ^ (s v t) Hypothetical Syllogism

s v t, ¬s Conjunctive Simplification, Given

∴t

b)

p → (q → r)

p v s

t → q

¬s

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∴¬r → ¬t

p → (q → r) Given

2.

3.