Due Week 4 Live

Week 3 Homework

1. Are the following formulas valid, satisfiable, or unsatisfiable?
    - P(a)→ExP(x)
    - ExP(x)→P(a)
    - ExP(x) V Ex!P(x) →AxP(x)
2. Foe each of the following sequent, give a formal proof if entailment holds.
    - AxP(X) ⊢ ExP(x)
    - Ax(P(x)→Q(x)), AxP(x) ⊢ AxQ(x)
    - Ax(P(x)→Q(x)), ExP(x) ⊢ ExQ(x)
    - !ExP(x) ⊢ Ax!P(X)
    - !AxP(x) ⊢ Ex!P(x)