1.

a. L1 = { w ∈ {0, 1}∗ | w contains at least three 1s }

S->A1A1A

A->0A|1A|

**b.** L2 = { w ∈ {0, 1}\*| w = wR and |w| is even }

S-> 0S0|1S1|

C. L3 = { ai bj ck | i, j, k ≥ 0, and i = j or i = k }