Problem 1 Using the conventions used in AES, compute \( \{05\} \bullet \{a1\} \).

Problem 2 Implement the encryption-direction of AES directly from FIPS-197. You may use any programming language you like. Use your implementation to compute \( \text{AES}_K(M) \) where \( K = M = 0^{128} \). Tell me the answer. Make simplicity the goal of your implementation, not speed. There are many implementations of AES on-line; do not consult any implementation that others have done.