Show that the following properties hold with respect to the semantic definition of Figure 5.2 in Schmidt’s book:

a. \( P[Z:=0; \text{if } A = 0 \text{ then } Z := A \] = P[Z := 0. \]

b. For any \( C \in \text{Command}, C[\text{diverge};C] = C[\text{diverge}] \)

c. For any \( B \in \text{Boolean-expr}, C_1, C_2 \in \text{Command}, \)
   \( C[\text{if } B \text{ then } C_1 \text{ else } C_2] \) = \( C[\text{if } \neg B \text{ then } C_2 \text{ else } C_1] \).

**Due date: October 19th, in class.**