3. a. $S \to aSa$ $S \to 0S0$ For ~~010010~~:
   $S \to bSb$ $S \to 1S1$ ~~S~~
   $S \to \epsilon$ $S \to \epsilon$

For 010010:
$S \to 0S0 \to 0(1S1)0 \to 01(0S0)10 \to 010010$

b. $S \to TY$
    $T \to aTb$
    $Y \to cY$
    $S \to \epsilon$
    $T \to \epsilon$
    $Y \to \epsilon$

c. $S \to TY$
    $T \to aT$
    $Y \to bYc$
    $S \to \epsilon$
    $T \to \epsilon$
    $Y \to \epsilon$

d. $S \to abS$ $S \to Sab$
    $S \to \epsilon$ $S \to \epsilon$

4. a. aab