3.4.12

Let T be the time of absorption and define $z_i := Pr(X_{T-1} = 1 | X_0 = i)$. This can be used for a first step analysis:

$$z_0 = 0,3z_0 = 0,2z_1$$
$$z_1 = 0,4 + 0,5z_0 + 0,1z_1|$$
$$\rightarrow z_0 = \frac{8}{53}$$