Homework 5-1

$U = (1\,0\,0\,0)$, Rate: $R = 1/3$, TC with

The correspondin D. Transform is

$$U(D) = 1 \cdot D^0 + 0 \cdot D^1 + 0 \cdot D^2 + 0 \cdot D^3 = 1$$

$$G(D) = \left(\frac{1 + D + D^2}{1 + D^2} \right)$$

The codeword at output of C_u and C_L gen

$$C(D) = U(D)\, G(D) = 1 \cdot \frac{1 + D^2}{1 + D + D^2} = 1(1 + D + D$$