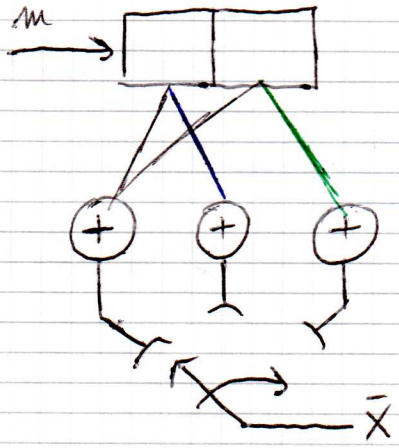
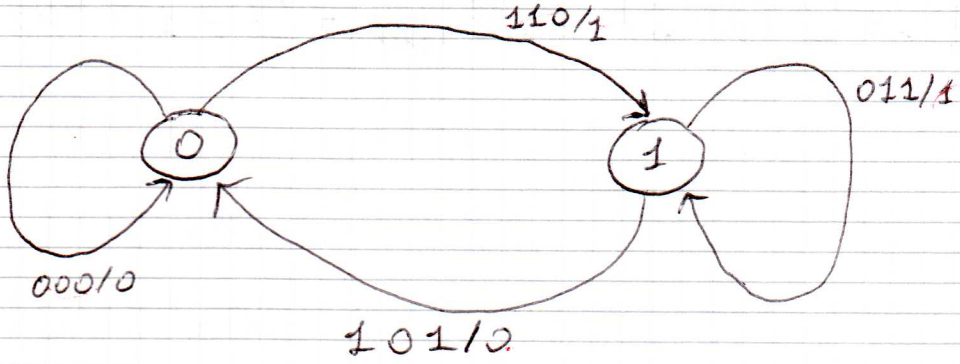
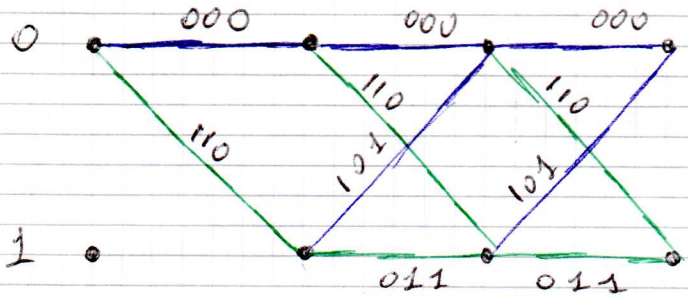
Es 3

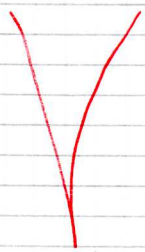
- $R = 1/3$ $\quad (3,2,1) \longrightarrow$ 0;1 1 / 0;1 0 / 0;0 1



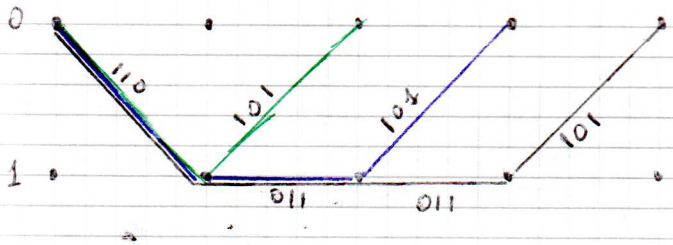
2^{k-1} possible states = 2







- Bit error probability



$d = 4$ 1 bit error

$d = 6$ 2 bits error

$d = 8$ 3 bits error

$$P(E) \leq Q\left(\sqrt{\frac{2E_b}{N_0} \cdot 4R}\right) + Q\left(\sqrt{\frac{2E_b}{N_0} \cdot 6R}\right) + Q\left(\sqrt{\frac{2E_b}{N_0} \cdot 8R}\right)$$

$$P_b(E) \leq 1 \cdot Q\left(\sqrt{\frac{2E_b}{N_0} 4R}\right) + 2\,Q\left(\sqrt{\frac{2E_b}{N_0} 6R}\right) + 3\,Q\left(\sqrt{\frac{2E_b}{N_0} \cdot 8R}\right)$$

- Determine the code associated....

0	1	0	1	0	1	1	0	0
000	110	101	110	101	110	011	101	000