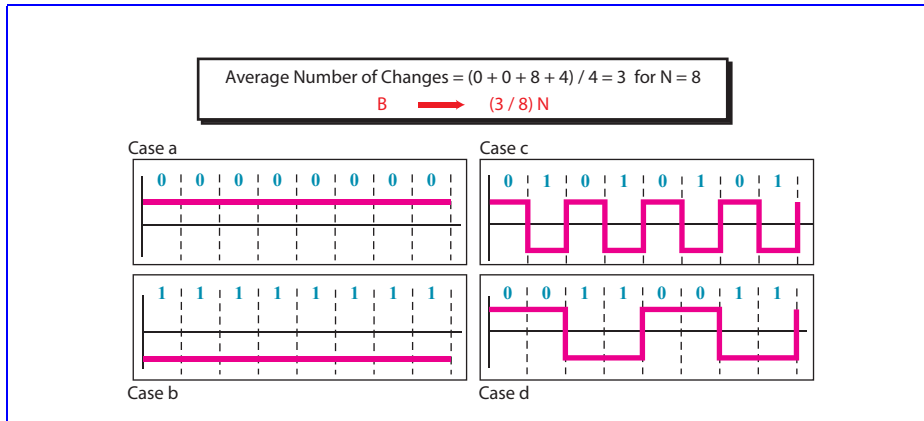


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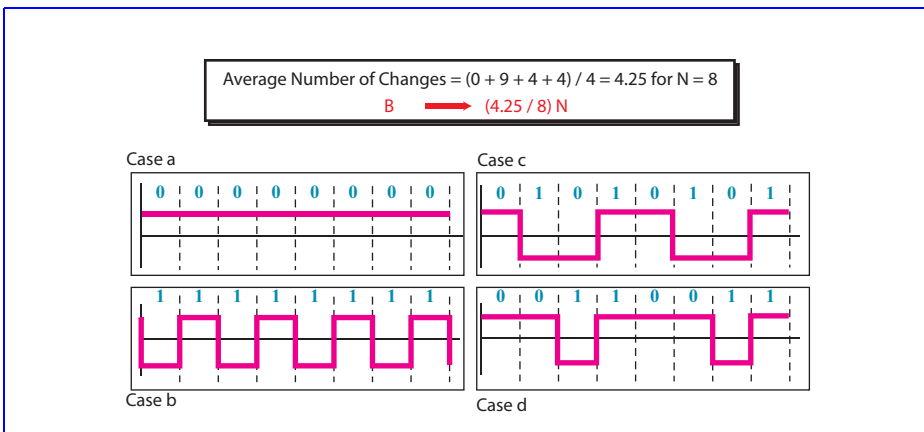
Prof. Paris

Solution for HW 6

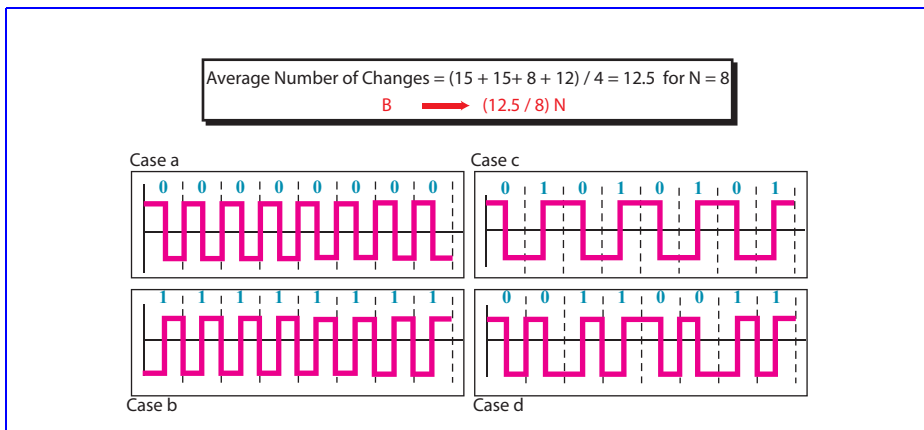
1. Problem 4.15



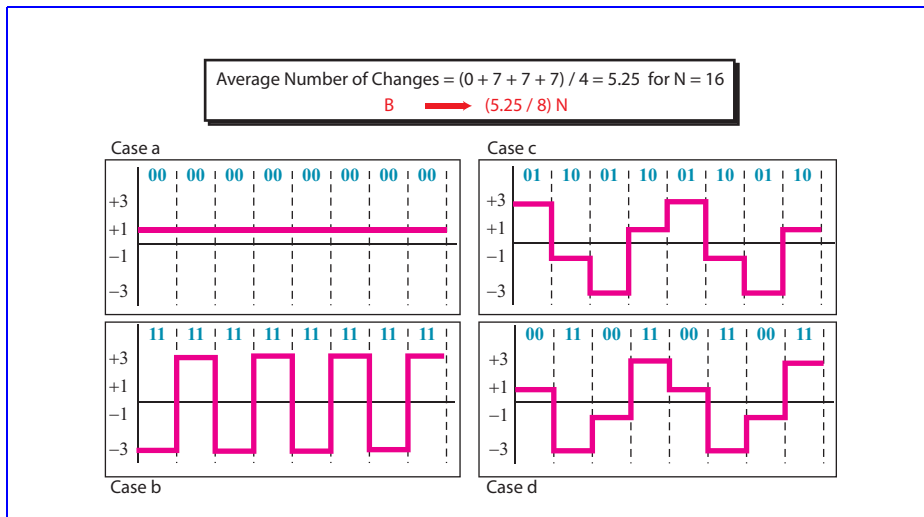
2. Problem 4.16



3. Problem 4.17



4. Problem



5. Problem 4.24

- The output stream is **01010 11110 11110 11110 11110 01001**.
- The maximum length of consecutive 0s in the input stream is **21**.
- The maximum length of consecutive 0s in the output stream is **2**.

6. Problem 4.31

We can calculate the data rate for each scheme:

- NRZ $\rightarrow N=2 \times B=2 \times 1\text{MHz}=2\text{Mbps}$
- Manchester $\rightarrow N=1 \times B=1 \times 1\text{MHz}=1\text{Mbps}$
- 2B1Q $\rightarrow N=4 \times B=4 \times 1\text{MHz}=4\text{Mbps}$