



- 5 How many bit strings of length seven either begin with two 0s or end with three 1s?
- 6 How many bit strings of length 10 contain either five consecutive 0s or five consecutive 1s?
- 7 How many bit strings of length eight contain either three consecutive 0s or four consecutive 1s? [Be careful of **over counting!**]
- 8 Suppose that  $p$  and  $q$  are prime numbers and that  $n = pq$ . Use the principle of inclusion-exclusion to find the number of positive integers not exceeding  $n$  that are relatively prime to  $n$ .