**6.3**

**Q12. A coin is flipped 10 times where each flip comes up either heads or tails. How many possible outcomes**

**a) are there in total?**

1024

**b) contain exactly two heads?**

45

**c) contain at most three tails?**

176

**d) contain the same number of heads and tails?**

252

**Q18A professor writes 40 discrete mathematics true/false**

**questions. Of the statements in these questions, 17 are**

**true. If the questions can be positioned in any order, how**

**many different answer keys are possible?**

We are just being asked for the number of strings of T’s and F’s of length 40 with exactly 17 T’s. The only

choice is which 17 of the 40 positions are to have the T’s, so the answer is C(40, 17) % 8.9 × 1010 .

**Q25. How many bit strings contain exactly eight 0s and 10 1s if every 0 must be immediately followed by a 1?**

45