**6.1**

**Q8. How many strings are there of lowercase letters of length four or less, not counting the empty string?**

475,255 (counting the empty string)

**Q12. How many positive integers between 100 and 999 inclusive**

**a) are divisible by 7?**

128

**b) are odd?**

450

**c) have the same three decimal digits?**

9

**d) are not divisible by 4?**

675

**e) are divisible by 3 or 4?**

450

**f ) are not divisible by either 3 or 4?**

450

**g) are divisible by 3 but not by 4**

225

**h) are divisible by 3 and 4**

75

**Q21. How many functions are there from the set {1, 2, . . . , n}, where n is a positive integer, to the set {0, 1}**

**a) that are one-to-one?**

2 if n = 1, 2 if n = 2, 0 if n ≥ 3

**b) that assign 0 to both 1 and n?**

2n−2 for n > 1; 1 if n = 1

**c) that assign 1 to exactly one of the positive integers**

**less than n?**

2(n − 1)