Reading Questions 13

page 192 Principle 6.2.1

page 192 Rule 6.2.2

page 193 Rule 6.2.3

1. The number of ways in which precisely one of a collection of mutually exclusive events can occur is the sum of the numbers of ways in which each event can occur.
2. If the intersection of any pair of sets among the sets $A_1, A_2, \ldots, A_n$ are empty then the sets are pairwise disjoint.
3. If $|A| = |B| = 5$, $|C| = 6$ and A, B, C are pairwise disjoint sets what is $|A \cup B \cup C|$?

Section 6.2 The Addition and Multiplication Rules (Part 1)

Counting

P 1. If the sets A and B are mutually exclusive what can you say about $A \cap B$?

P 2. How many ways can a password of length 5 be created using only 3 letters x, y, z?

P 3. From a group of 14 dogs, 5 cats, and 3 monkeys how many ways can a dog, a cat, and a monkey be selected?

P 4. How many three-digit numbers contain the digits 2 and 5?

P 5. Let $A = \{1, 2, \ldots, n\}$ and $B = \{1, 2\}$. Show that there are 2^n functions from A to B.