Exercise - Week 6

Sets

1. Write a function that takes a set as a parameter and prints its elements on a line, enclosed in braces { }, with elements separated by a comma.
Input: {1,2,3}; Output: {1,2,3}

2. Write a function that takes a list of pairs (of a specified type) and returns a set containing the elements on the first position in each pair (variants: second position; both positions, if they are of the same type).
Input: [(1,2), (3,4)]; Output: {1,3}

3. Implement the standard filter function that takes as parameters a boolean function f and a set s and returns the set of elements in s that satisfy the condition f.
Input: lambda x: x % 2 == 0, {1, 2, 3, 4}; Output: {2, 4}

4. Implement the standard partition function which takes as parameters a boolean function f and a set s and returns a pair of sets, with the elements of s satisfying and not satisfying the condition f, respectively.
Input: lambda x: x % 2 == 0, {1, 2, 3, 4}; Output: ({2, 4}, {1, 3})

5. Write a function that takes a list of sets and returns the union (variant: intersection) of the sets.
Input: [{1, 2, 3}, {1, 2, 3, 4}, {3, 5, 6, 7}]; Output: reuniune: {1, 2, 3, 4, 5, 6, 7}; intersectie: {3}

6. Write a function that returns the set of digits of a number. Then write another function that takes a set of numbers and returns the union/intersection of the sets of their digits.
Input: {1234, 123, 127}; Output: reuniune: {1, 2, 3, 4, 7}; intersectie: {1, 2}