Excercise 3.9 Write down all subsets of each of the following.

(a) $\{1, 2, 3\}$

(b) $\{\mathbb{N}, \mathbb{Q}, \mathbb{R}\}$

(c) $\{\mathbb{N}, \{\mathbb{Q}, \mathbb{R}\}\}$

(d) $\emptyset$

Answer (a) $\emptyset, \{1\}, \{2\}, \{3\}, \{1, 2\}, \{1, 3\}, \{2, 3\}, \{1, 2, 3\}$
Answer (b) $\emptyset, \{\mathbb{N}\}, \{\mathbb{Q}\}, \{\mathbb{R}\}, \{\mathbb{N}, \mathbb{Q}\}, \{\mathbb{N}, \mathbb{R}\}, \{\mathbb{Q}, \mathbb{R}\}, \{\mathbb{N}, \mathbb{Q}, \mathbb{R}\}$
Answer (c) $\emptyset, \{\mathbb{N}\}, \{\{\mathbb{Q}, \mathbb{R}\}\}, \{\mathbb{N}, \{\mathbb{Q}, \mathbb{R}\}\}$
Answer (d) $\emptyset$