## Exercise 45

Sets Find the indicated set if

$$
\begin{gathered}
A=\{x \mid x \geq-2\} \quad B=\{x \mid x<4\} \\
C=\{x \mid-1<x \leq 5\}
\end{gathered}
$$

(a) $B \cup C$
(b) $B \cap C$

## Solution

The union of $B$ and $C(B \cup C)$ is the combination of elements in both, whereas the intersection of $B$ and $C(B \cap C)$ is only the elements they have in common.

$$
\begin{aligned}
& B \cup C=\{x \mid x \leq 5\} \\
& B \cap C=\{x \mid-1<x<4\}
\end{aligned}
$$

