

**Definition builtIn1:**  $x \cup y$  is the set of  $z$  such that  $z \in x$  or  $z \in y$ .  
Precedence: 40.

**Definition builtIn2:**  $x \cap y$  is the set of  $z$  such that  $z \in x$  and  $z \in y$ .  
Precedence: 30.

**Definition builtIn3:**  $x \setminus y$  is the set of  $z$  such that  $z \in x$  and it is not the case that  $z \in y$ . Precedence: 50.

**Definition builtIn4:**  $(a, b) = \{\{a\}, \{a, b\}\}$ .

**Definition builtIn5:**  $X \subseteq Y$  if and only if for every  $x$ , if  $x \in X$  then  $x \in Y$ .

**Definition builtIn6:**  $\emptyset$  is the unique  $S$  such that for every  $x$ , it is not the case that  $x \in S$ .

**Definition builtIn7:**  $\cup X$  is the set of  $u$  such that there exists  $x \in X$  such that  $u \in x$ .

**Definition builtIn8:**  $\cap X$  is the set of  $u$  such that for every  $x \in X$ ,  $u \in x$ .

**Definition builtIn9:**  $\wp(X) = \{U : U \subseteq X\}$ .

**Definition builtIn10:**  $X \supseteq Y$  if and only if for every  $y$ , if  $y \in Y$  then  $y \in X$ .