29. (a) The answer is \( \emptyset \).
   Reason: for any set \( B \)
s.t. \( \emptyset \in B \), \( \cap B = \emptyset \).

(b) Answer: \( \{ \emptyset, \{ \emptyset \} \} \).
   (Write out each of the three sets
   and take their intersection.)

31. 
(a) \( U_B = \{1,2\} \cup \{2,3\} \cup \{1,3\} \cup \{\emptyset\} \)
    \[= \{\emptyset, 1, 2, 3\} \]
(b) \( \cap B = \emptyset \)
(c) \( \cap U_B = \cap \{\emptyset, 1, 2, 3\} \) \ by (a)
    \[= \emptyset \cap 1 \cap 2 \cap 3 \]
    \[= \emptyset \]
(d) \( U \cap B = U \emptyset = \emptyset \)