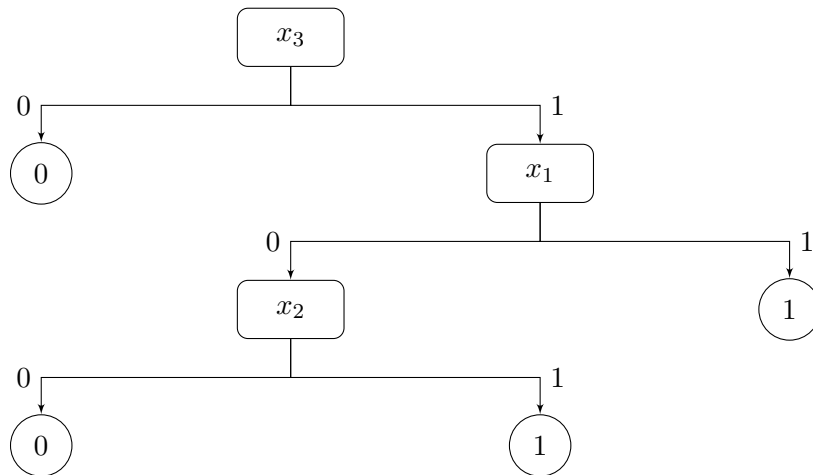## 1: Decision trees

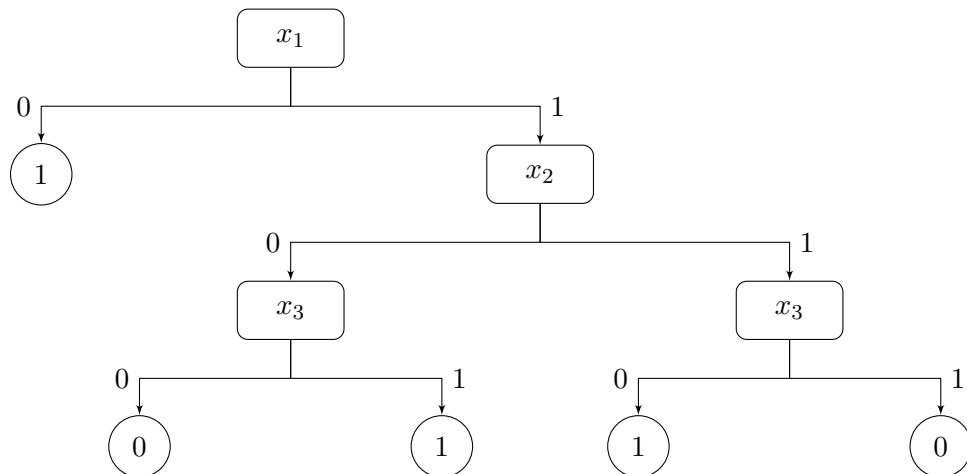*Note: Square nodes test for feature values and round leaf nodes specify the class labels.*

(1) Representing Boolean functions as decision trees.

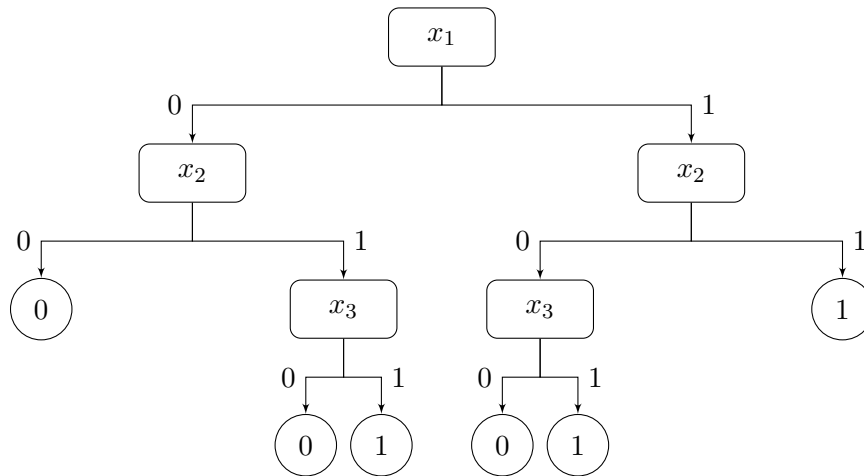   **(a)** $(x_1 \vee x_2) \wedge x_3$

    (b) $(x_1 \wedge x_2)\ xor\ (\neg x_1 \vee x_3)$

(c) The 2-of-3 function defined as follows: at least 2 of $\{x_1, x_2, x_3\}$ should be true for the output to be true.

(2) Pokémon Go decision tree to determine whether a Pokémon can be caught.

　(a)

　(b)

　(c)

　(d)

　(e)

　(f)

　(g)

(3) Using the Gini measure with the ID3 algorithm.

　(a)

　(b)

2: Linear Classifiers

(1)

(2)

(3)