

## QUIZ3

### 1. Decision Tree

Impurity functions play an important role in decision tree branching. For binary classification problems, let  $\mu_+$  be the fraction of positive examples in a data subset, and  $\mu_- = 1 - \mu_+$  be the fraction of negative examples in the data subset. The Gini index is  $1 - \mu_+^2 - \mu_-^2$ . What is the maximum value of the Gini index among all  $\mu_+ \in [0, 1]$ ?

- A. 0.5
- B. 0.75
- C. 0.25
- D. 0
- E. 1