

$$H_0 = \text{Uniform}(-1, 1)$$

$$H_1 = \text{Uniform}(0, 1)$$

$$\therefore \overleftarrow{-} t \overrightarrow{+}, \text{ where } t > 0$$

False Positive:  $P(H_0 = +)$

$$P(\text{Uniform}(-1, 1) > t) = \frac{1}{8}$$

$$1 - P(\text{Uniform}(-1, 1) < t) = \frac{1}{8}$$

$$1 - \frac{1+t}{2} = \frac{1}{8}$$

$$\frac{1-t}{2} = \frac{1}{8}$$

$$1-t = \frac{1}{4}$$

$$t = \frac{3}{4}$$

$\therefore$  False Negative:  $P(H_1 = -)$

$$P(\text{Uniform}(0, 1) < t) = P(\text{Uniform}(0, 1) < \frac{3}{4}) = \frac{3}{4}$$