Q1

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1 Objective Question [1 mark]

Consider two perceptrons defined by the threshold expression $w_0 + w_1x_1 + w_2x_2 > 0$.
Perceptron A has weight values

$$w_0 = 1, \quad w_1 = 2, \quad w_2 = 1$$

and Perceptron B has weight values

$$w_0 = 0, w_1 = 2, w_2 = 1$$

True or False? Perceptron A is *more general than* Perceptron B.

Definition: Let h_j and h_k be boolean valued function defined over X. Then h_j is *more general than or equal to* h_k (written $h_j \geq_g h_k$) if and only if

$$(\forall x \in X)[h_k(x) = 1 \rightarrow h_j(x) = 1]$$

That is, any instance of h_k also satisfies h_j.

Sol True

$2x_1 + x_2 > 0$ B

$1 + 2x_1 + x_2 > 0$ A

Because bias term will help to trigger activation function more.