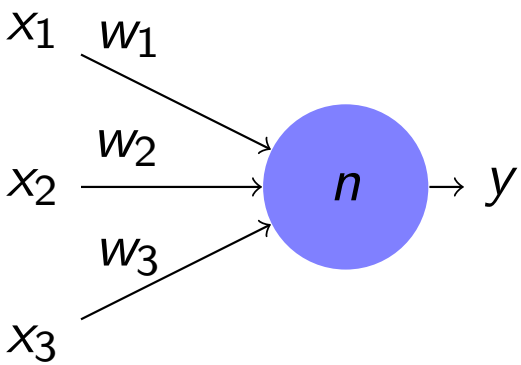
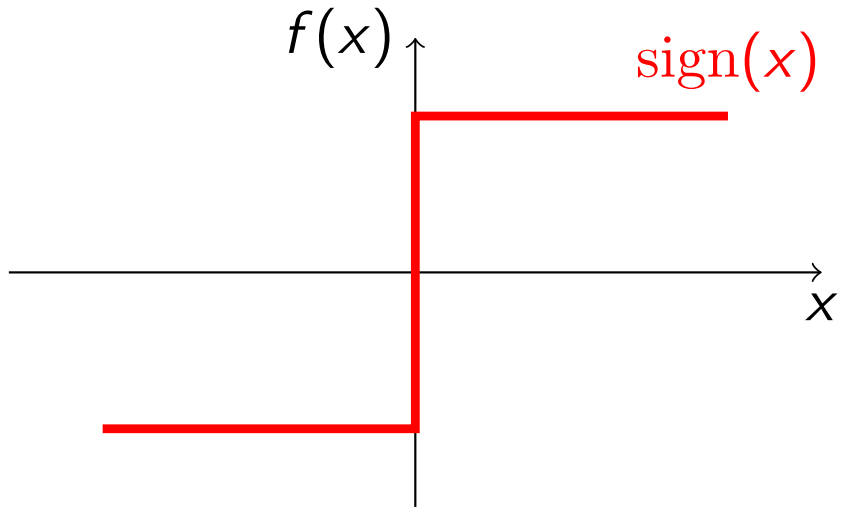
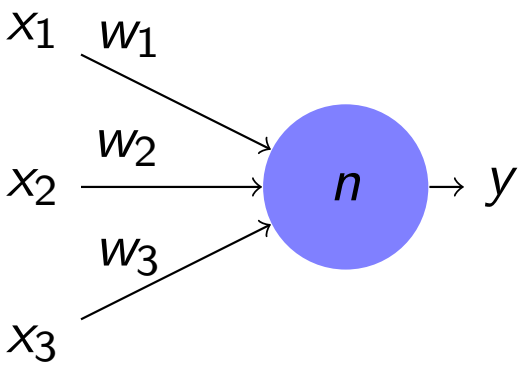
Персептрон



$$y = f\left(\sum_{i=1}^{n} w_i x_i\right)$$



Персептрон



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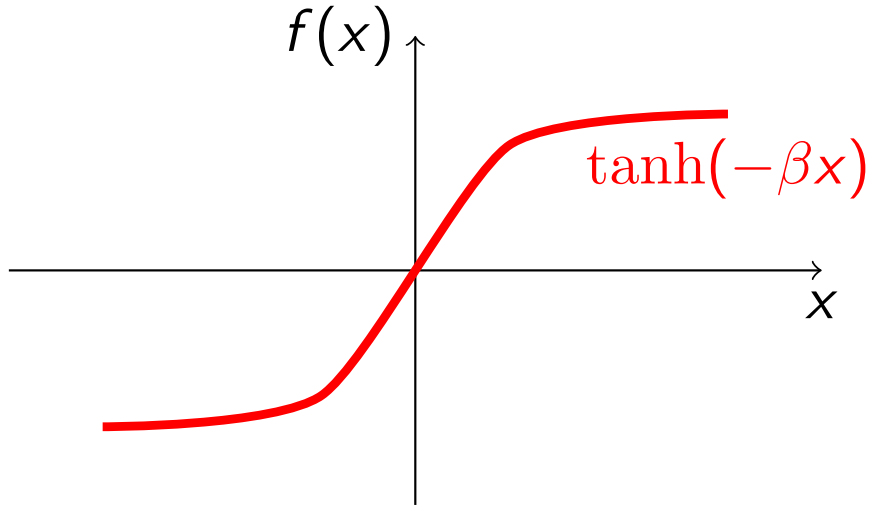
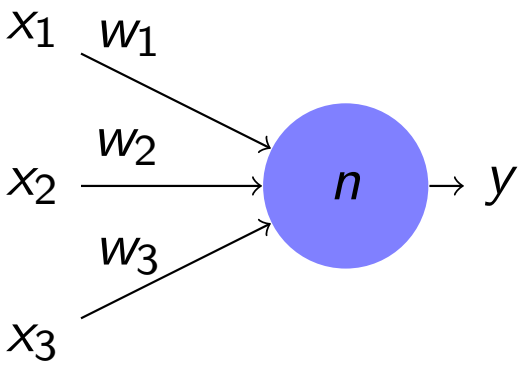


Персептрон



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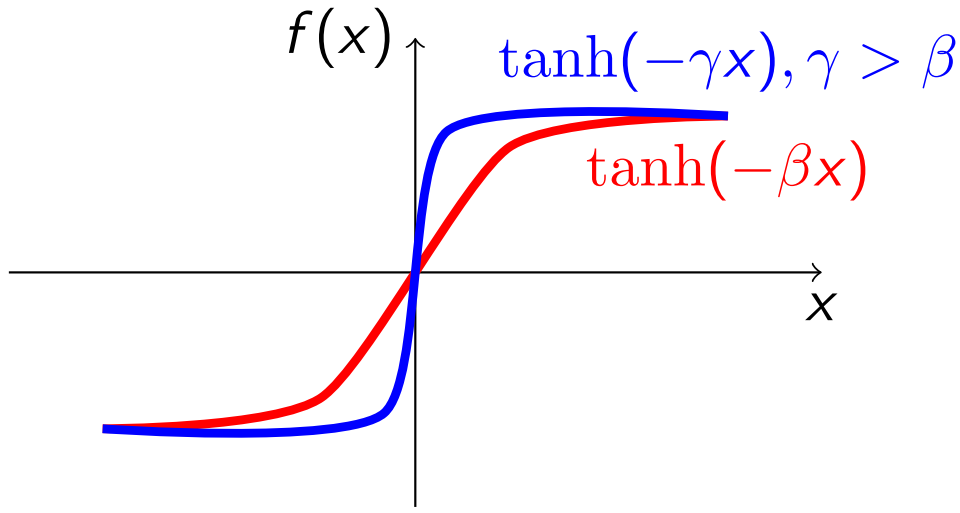
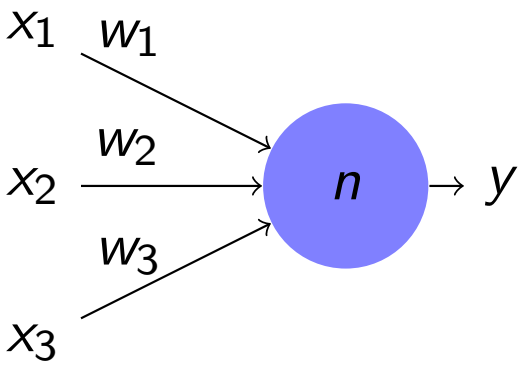


Персептрон



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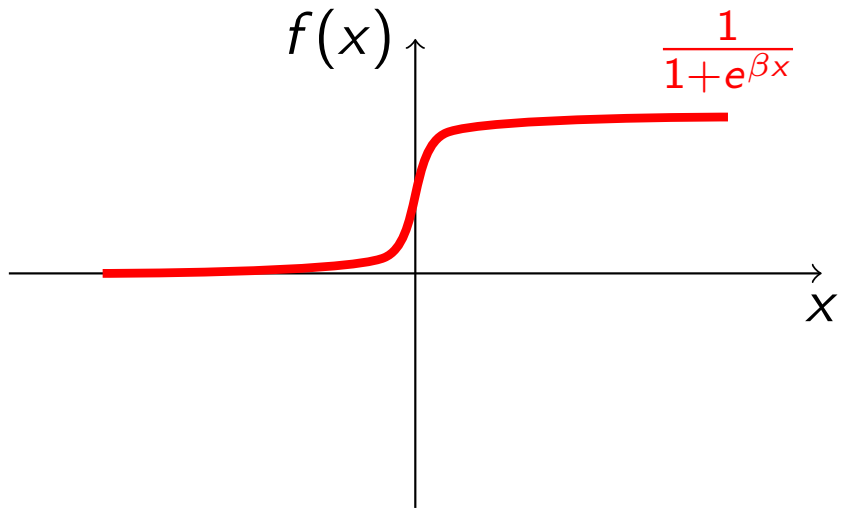
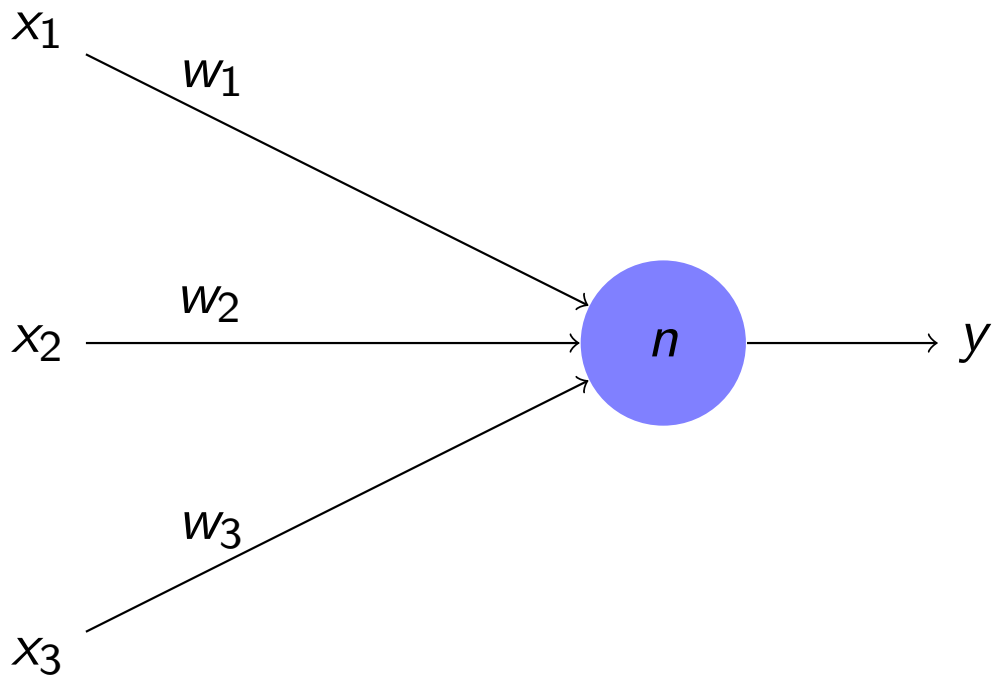
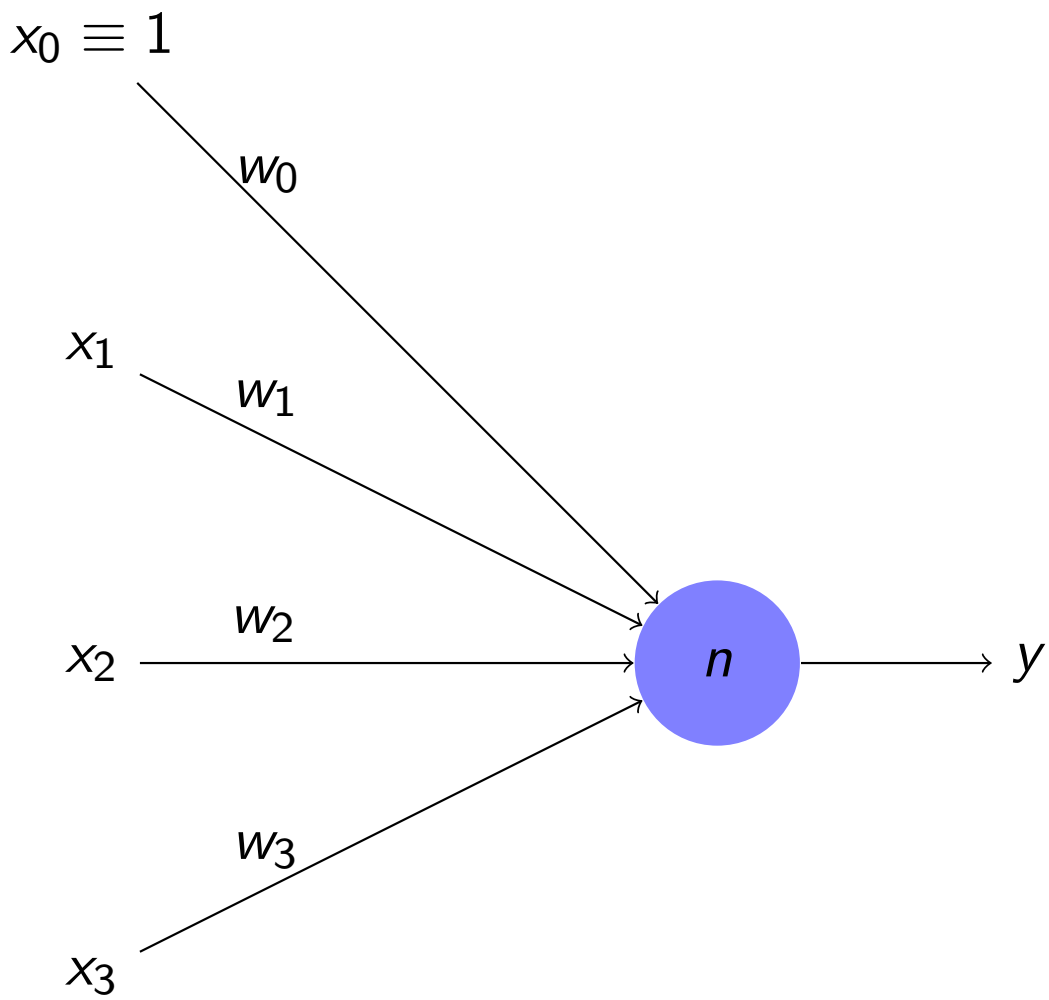


Вес активации



Вес активации



Реализация конъюнкции

$$\operatorname{sign}(w_0 + w_1 x_1 + w_2 x_2) = x_1 \wedge x_2$$

x_1	x_2	$x_1 \wedge x_2$
-1	-1	-1
-1	1	-1
1	-1	-1
1	1	1

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-1	1	-1
1	-1	-1
1	1	1

$$\begin{cases} w_0 - w_1 - w_2 < 0 \\ w_0 + w_1 - w_2 < 0 \\ w_0 - w_1 + w_2 < 0 \\ w_0 + w_1 + w_2 > 0 \end{cases}$$

Реализация конъюнкции

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-1	-1	-1
-1	1	-1
1	-1	-1
1	1	1

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$$\begin{aligned} w_0 &= -1 \\ w_1 &= 1 \\ w_2 &= 1 \end{aligned}$$

Реализация дизъюнкции

$$\operatorname{sign}(w_0 + w_1 x_1 + w_2 x_2) = x_1 \vee x_2$$

x_1	x_2	$x_1 \vee x_2$
-1	-1	-1
-1	1	1
1	-1	1
1	1	1

Реализация дизъюнкции

$$\operatorname{sign}(w_0 + w_1 x_1 + w_2 x_2) = x_1 \vee x_2$$

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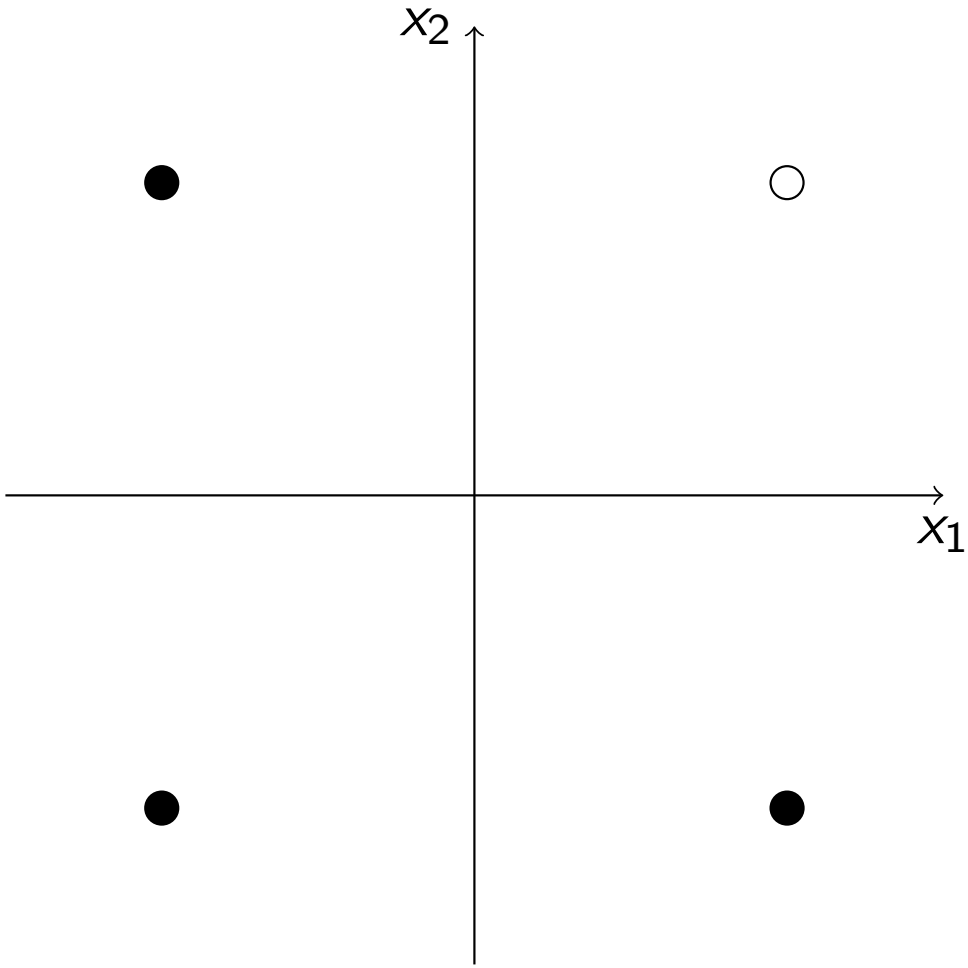
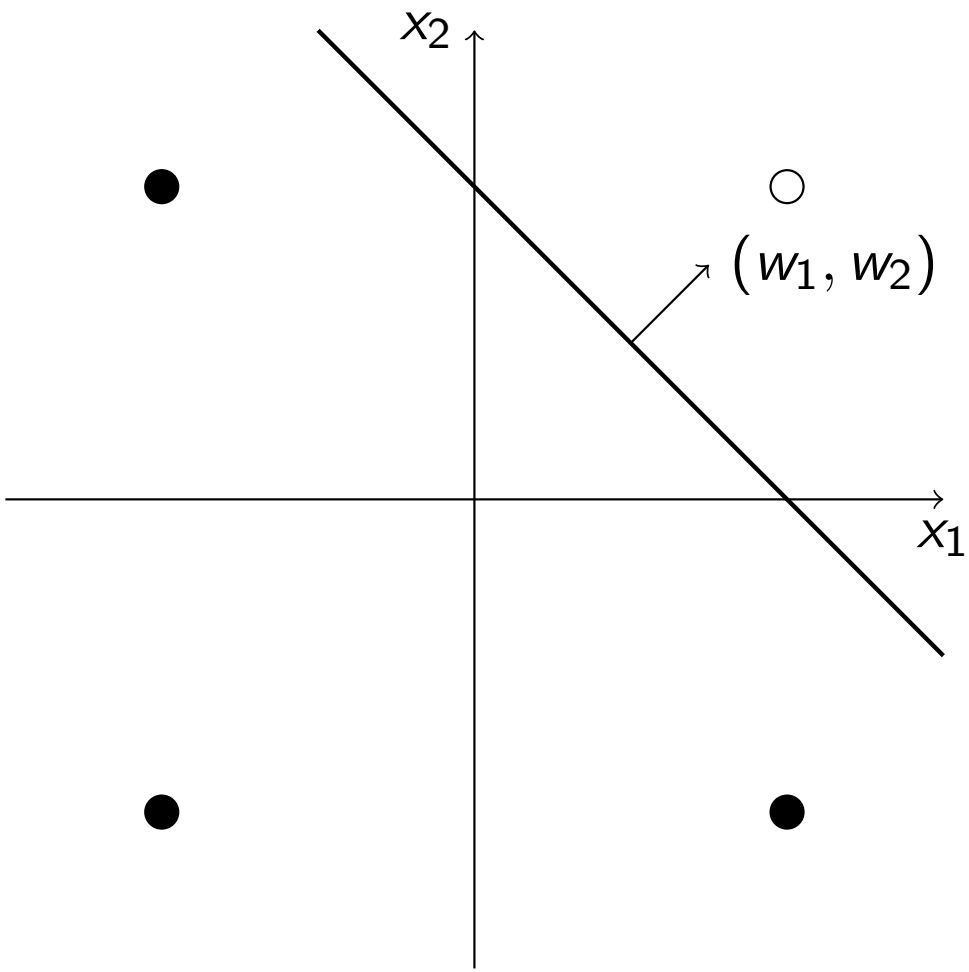
$$\begin{cases} w_0 - w_1 - w_2 < 0 \\ w_0 + w_1 - w_2 > 0 \\ w_0 - w_1 + w_2 > 0 \\ w_0 + w_1 + w_2 > 0 \end{cases}$$

$$\begin{aligned} w_0 &= 1 \\ w_1 &= 1 \\ w_2 &= 1 \end{aligned}$$

Геометрическая интерпретация



Геометрическая интерпретация



Обучение персептрона