support vector

$d = \dfrac{2}{\|w\|}$

$+1$

margin

$w' = \dfrac{w}{2} \implies d' = \dfrac{4}{\|w\|}$

$+1$

new margin

-1

classify point to -1 $g(x) = w^{T}x + w_0$

classify point to $+1$

decision boundary