# Graphing Loss vs Margin

**Logistic regression:**
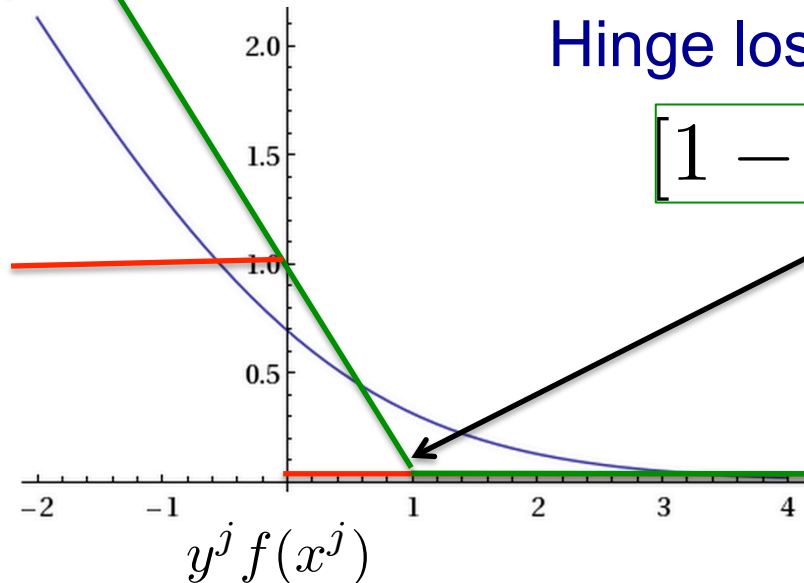
$$\ln(1 + \exp(-y^j f(x^j)))$$

**Hinge loss:**

$$[1 - y^j f(x^j)]_+$$

**0-1 Loss:**

$$\delta(f(x^j) \neq y^j)$$



$y^j f(x^j)$

**We want to smoothly approximate 0/1 loss!**