Arbitrary cost: \( \hat{L}_\phi(f) = \frac{1}{N} \sum_{i=1}^{N} \phi(y^i f(x^i)) \)

Learning algorithm: finds \( b \sim -\nabla_f \left( \sum_{i=1}^{N} \phi(y^i f(x^i)) \right) \)

**Algorithm ANYBOOST**

**Initialize** \( f^0 = b^0 \)

for \( k = 1, \ldots M \)  

learn \( b^k \)

find \( \beta^k \) by line search  

\( f^k = f^{k-1} + \beta^k b^k \)