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Quiz 1

① $L(Y, f(X)) = (Y - f(x))^2$

$L = Y^2 - 2Yf(x) + f(x)^2$

$0 = Y^2 - 2Y + f(x)^2$

$0 = (Y - f(x))(Y - f(x))$

$0 = Y - f(x)$

$\boxed{Y = -f(x)}$ 2

② $Y! = C(x)$

$3Y! = C(x)$ ← Error

$3Y = C(x)$

$Y = 3(C(x))$

⑤ a) $Var(\hat{f}(x_0))$ is the variance in the given system at an initial x.

$[Bias(\hat{f}(x_0))]^2$ is the bias of a given system, and is squared to prevent negative bias

b) The bias will decrease because the two are directly related

⑥ B_s is the salary of an individual in one of the given states

③ Supervised because your demographic would be your dependant variable and what they buy would be an independant variable, making it supervised

④ a) The redline is the best function, as you would want your training variable to approach zero

b) The dashed line is a poor average of the errors in between the worst and best case

1 | 1 | 1 | 5 | 2 | 2 | 2