

2

1.

$$g = [0 \ 1 \ 0]$$

$$y = [0.25 \ 0.6 \ 0.15]$$

nonzero for the
elements in y that
are nonzero

$$\text{CEL: } H(y, g) = -1 \log(0.6) = 0.222$$

$$\text{MSEL: } \text{MSE}(y, g) = \frac{1}{3}((0.25)^2 + (0.6-1)^2 + (0.15)^2) = 0.082$$

$$\begin{aligned} \text{SVML: } \text{SVM}(y, g) &= \max(0, 0.15 - 0.6 + 1) + \max(0, 0.25 - 0.6 + 1) \\ &= 0.55 + 0.65 = 1.2 \end{aligned}$$