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1. vanilla: $A = \frac{1}{n}\sum_{i=1}^{n} 1[f(x_i) == y_i]$

$= \frac{1}{n} \cdot (nP_{c\uparrow}) = P_{c\uparrow}$

class-wise: $A = \frac{1}{C}\sum_{c=1}^{C} a_c = \frac{1}{C}(1+0+0) = \frac{1}{C} = \frac{1}{3}$

2. vanilla: $A = \frac{1}{n}\sum_{i=1}^{n} 1[f(x_i) == y_i]$

$= \frac{1}{n} \cdot (nP_{c\downarrow}) = P_{c\downarrow}$

class-wise: $A = \frac{1}{C}\sum_{c=1}^{C} a_c = \frac{1}{C}(0+0+1) = \frac{1}{C} = \frac{1}{3}$

3. vanilla: $A = (1 \cdot q_{c1} \cdot nP_1 + 1 \cdot q_{c2} \cdot nP_2 + 1 \cdot q_{c3} \cdot nP_3) / n$

$= P_1 q_{c1} + P_2 q_{c2} + P_3 q_{c3}$

class-wise: $A = \frac{1}{3}\sum \frac{1 \cdot q_{c1} \cdot nP_1}{nP_1} + \frac{1 \cdot q_{c2} \cdot nP_2}{nP_2} + \frac{1 \cdot q_{c3} \cdot nP_3}{nP_3} = \frac{1}{3}$

4. vanilla: $A = (1 \cdot P_1 \cdot nP_1 + 1 \cdot P_2 \cdot nP_2 + 1 \cdot P_3 \cdot nP_3) / n$

$= P_1^2 + P_2^2 + P_3^2$

class-wise: $A = \frac{1}{3}\sum \frac{1 \cdot P_1 \cdot nP_1}{nP_1} + \frac{1 \cdot P_2 \cdot nP_2}{nP_2} + \frac{1 \cdot P_3 \cdot nP_3}{nP_3} = \frac{1}{3}$

5. ~~vanilla:~~

(A): ~~$P_{c\uparrow} = \frac{1}{3}$, the other $\downarrow$~~ $P_1 = P_2 = P_3 = \frac{1}{3}$

(B): $P_1 = 0.95$, $P_2 = 0.025$, $P_3 = 0.025$