





$$P_g(x) = p(x|y=g) = \mathcal{N}(\mu_g, \Sigma_g)$$

$$\frac{\|x - \mu_g\|_2^2}{2} = \left( \frac{x^T x}{2} \right) + \frac{\mu_g^T \mu_g}{2} - x^T \mu_g$$



