$$P(y=1|x)$$

$$= \frac{P(x|y=1)P(y=1)}{P(x)}$$

$$= \frac{P(x|y=1)P(y=1)}{P(x|y=0)P(y=0)+P(x|y=1)P(y=1)}$$

$$= \frac{\gamma \prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^1\right)^2}{2\sigma_j^2}}}{(1-\gamma)\prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^0\right)^2}{2\sigma_j^2}} + \gamma \prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^1\right)^2}{2\sigma_j^2}}}$$

$$P(y=0|x)$$

$$= \frac{P(x|y=0)P(y=0)}{P(x)}$$

$$= \frac{P(x|y=0)P(y=0)}{P(x|y=0)P(y=0)+P(x|y=1)P(y=1)}$$

$$= \frac{(1-\gamma) \prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^0\right)^2}{2\sigma_j^2}}}{(1-\gamma)\prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^0\right)^2}{2\sigma_j^2}} + \gamma \prod_{j=1}^{d} \frac{1}{\sqrt{2\pi}\sigma_j} e^{-\frac{\left(x_j-\mu_j^1\right)^2}{2\sigma_j^2}}}$$