1. a) $\frac{1}{n}\sum_{i=1}^{n} \nabla_\theta f_\theta(x_i)$ estimates $E[\nabla_\theta f_\theta(X)]$, which is only part of $\nabla_\theta L(\theta)$, thus making the result biased towards the other term.

b) We simply average the n samples: $\frac{1}{n}\sum_{i=1}^{n} f_\theta(\mu + \Sigma^{1/2}\epsilon)$