Suppose \( x_1, x_2, \ldots, x_n \) are iid \( N(\mu, 1) \)

\[
f(x_i | \mu) = \frac{1}{\sqrt{2\pi}} \exp \left( -\frac{1}{2} (x_i - \mu)^2 \right)
\]

So

\[
L(\mu_1, \mu_2) = \frac{\exp \left( -\frac{1}{2} \sum (x_i - \mu_1)^2 \right)}{\exp \left( -\frac{1}{2} \sum (x_i - \mu_2)^2 \right)}
\]

\[
= \frac{\exp \left( \mu_1 \sum x_i - \frac{n}{2} \mu_1^2 \right)}{\exp \left( \mu_2 \sum x_i - \frac{n}{2} \mu_2^2 \right)}
\]

Note that for \( T(x) = \sum x_i \), all \( x \) with \( T(x) = t \) have the same likelihood ratio function of \( \mu_1 \) and \( \mu_2 \)

\[
\frac{\exp \left( \mu_1 t - \frac{n}{2} \mu_1^2 \right)}{\exp \left( \mu_2 t - \frac{n}{2} \mu_2^2 \right)}
\]

so \( T(x) = \sum x_i \) is sufficient for \( \mu \).