$\boxed{10}$

$$\psi_\mu(x) = \sum_{i=1}^{n} \sqrt{\mu^2 + x_i^2} - \mu \qquad x \in \mathbb{R}^n$$

$$\frac{\partial \psi_\mu(x)}{\partial x_i} = \frac{x_i}{\sqrt{\mu^2 + x_i^2}} , \qquad \frac{\partial^2 \psi_\mu(x)}{\partial x_i \partial x_j} = \begin{cases} \dfrac{\mu^2}{(\mu^2 + x_i^2)^{3/2}} & i=j \\ 0 & i \neq j \end{cases}$$

$$* \boxed{\therefore \nabla^2 \psi_\mu(x) = \underset{n \times n}{\mathrm{diag}} \left\{ \frac{\mu^2}{(\mu^2 + x_i^2)^{3/2}} \right\}} \longrightarrow \boxed{\lim_{x \to \infty} \nabla^2 \psi_\mu(x) = 0} \;**$$

$\rightarrow$ For $\psi_\mu(x)$ to be Convex, $\nabla^2 \psi_\mu(x) \succeq \underline{0}$

We Can See from (*) that all eigen values of $\nabla^2 \psi_\mu(x) > 0$
which means that $\nabla^2 \psi_\mu(x)$ is positive Semi-definite

$\boxed{\therefore \psi_\mu(x) \text{ is Convex}}$ $\square$

$\rightarrow$ For $\psi_\mu(x)$ to be δ-Strongly Convex, $\nabla^2 \psi_\mu(x) \succeq \delta I$, $\delta > 0$

We Can See from (**) and (*) that there's no positive Constant
Can bound $\nabla^2 \psi_\mu(x)$ from below

$\boxed{\therefore \psi_\mu(x) \text{ is } \underline{\text{Not}} \text{ Strongly Convex}}$