so $x \neq 2^m = 2^{m+1}$ (as $|x| > 2^{m+1}$)
\begin{align*}
\text{Case 1:} & \quad x = 2^m, \quad m \geq 0 \\
\text{Case 2:} & \quad x < 2^m \\
\text{Case 3:} & \quad x > 2^m
\end{align*}

Proof:

For any basis string $\overline{l}_p$, we define $I = \frac{1}{\overline{l}_p}$

\begin{align*}
\text{Case 1:} & \quad x = 2^m, \quad m \geq 0 \\
\text{Case 2:} & \quad x < 2^m \\
\text{Case 3:} & \quad x > 2^m
\end{align*}

For $\theta \neq 0$, we have

\begin{align*}
\frac{i(\theta)}{\theta} & = \frac{i(\theta)}{\theta} \\
\frac{i(1)}{\theta} & = \frac{i(1)}{\theta}
\end{align*}

Hence, for $\theta \neq 0$, case 1 is impossible.

\begin{align*}
\text{Case 4:} & \quad x = 2^m, \quad m \geq 0 \\
\text{Case 5:} & \quad x < 2^m \\
\text{Case 6:} & \quad x > 2^m
\end{align*}

Proof. The two noncrossing Steiner $\phi$ and $\psi$ cannot

Solution for Homework 1:
\[
0 = \frac{(z - x)^{\frac{3}{2}}}{1} \cdot \frac{1}{1} - \frac{(z - x)^{\frac{3}{2}}}{1} \cdot \frac{(3 + z - x)^{\frac{3}{2}}}{1} \cdot \frac{(1 - 0)}{(3 + z - x)^{\frac{3}{2}}} + \frac{(1 - 0)}{(3 + z - x)^{\frac{3}{2}}}
\]

\[\int_{0}^{\infty} \left( \delta_{p} \right)_{\delta_{p} = \frac{(3 + z - x)^{\frac{3}{2}}}{1}} \quad \text{and} \quad \int_{0}^{\infty} \left( \delta_{p} \right)_{\delta_{p} = \frac{(3 + z - x)^{\frac{3}{2}}}{1}} = (z - x)^{\frac{3}{2}} \]

**Problem 2.12** Another Representation of the Delta Function

\[
\text{(a)} \quad \text{Part (b)} \quad \text{The answer scales like the inverse square root of the mass so if } M \text{ is one kilogram, which is 1000}
\]

\[
\text{Part (c)} \quad \text{Since according to equation (2.70), the spread is}
\]

\[
\frac{\mu}{\sqrt{2}\hbar} \ll \frac{\partial\nu}{\hbar} < \frac{\partial\nu}{\hbar} \quad \text{or} \quad \frac{\partial\nu}{\hbar} < \frac{\partial\nu}{\hbar}
\]

The correct result:

\[
\text{The recursion rule is satisfied by the given expression which also has the correct sign by induction this is}
\]

\[
\frac{\partial}{\partial z} \left( \text{V} \cdot \text{G} \right) = \nabla \left( \text{V} \cdot \text{G} \right)
\]

\[\text{and} \quad \frac{\partial}{\partial z} \left( \text{V} \cdot \text{G} \right) = \nabla \left( \text{V} \cdot \text{G} \right)
\]

\[
\text{But also}
\]

\[\left( \text{V} \cdot \text{G} \right) = \delta_{p} \frac{\partial}{\partial z} \left( \text{V} \cdot \text{G} \right) = \delta_{p} \frac{\partial}{\partial z} \left( \text{V} \cdot \text{G} \right)
\]

\[\text{Clearly, } \text{q} = 0. \text{ Now differentiate, being careful about the order of the operations.}
\]

\[
\frac{\partial}{\partial z} \left( \text{V} \cdot \text{G} \right) = \text{G} \cdot \text{V} \quad \text{Since the series converges, this is just a Taylor series. Write}
\]

\[\text{Problem 2.10 The Bucker-Hamilton Lemma}
\]

\[\text{Chapter 1. Fundamentals of Quantum Mechanics}
\]

\[\text{Chapter 1. Fundamentals of Quantum Mechanics}
\]