<table>
<thead>
<tr>
<th>Requested lock</th>
<th>existing locks</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

If it is you and only you holding an S lock, you can upgrade!
$T_2$ is shrinking phase

$Z^r(\eta)$ is shrinking phase

$X \rightarrow \eta^r(\eta)$

Possible
This schedule is possible under 20L
\[ \frac{1}{2} \int (x) \quad \frac{1}{2} \int (x) \quad N(y) \quad \omega_2(x) \quad \omega_1(x) \]

\[ \leq \ell_1(x) \quad \leq \ell_2(x) \quad \leq \ell_1(y) \]

\[ \text{not possible} \]

\[ T_i \text{ is in shrinking phase} \]

\[ \text{has to lock on } X \]
T₁: \( w(x) \) \( \rightarrow \) \( w₁(y) \) commit

ZPL guarantees serializability

T₁ \( \rightarrow \) T₂

not possible

Tᵢ \( \rightarrow \) wᵢ \( \rightarrow \) \( \rightarrow \) \( \rightarrow \) Tₜ
Multiversion Concurrency Control (MVCC)