## (M) Minimum Spelling Trees (1/2)

MI. $\begin{array}{llllll}(" \mathrm{Haus} & (+\mathrm{H} & +\mathrm{a} & +\mathrm{u} & +\mathrm{s} & \text {-> } \\ & \mathrm{Ha}+\mathrm{e} & +\mathrm{s} & -> & \end{array}$
"Hauses" (-a +ä $-\mathrm{s} \quad+\mathrm{r} \quad->$
"Häuser" (+n ->
"Häusern")) ) )
Cost: II
M2. ("" $\quad$ (+H +a $+\mathrm{u} \quad+\mathrm{s} \quad->$
"Haus" (+e ->
"Hause" (+s ->
"Hauses")
$(-\mathrm{a}+\mathrm{a}+\mathrm{r} \quad->$
"Häuser" (+n ->
"Häusern")) ) )
Cost: 10
M3. 7

$$
\begin{aligned}
& \begin{array}{clllll}
\text { (" " } & (+\mathrm{H}+\mathrm{a} & +\mathrm{u} & +\mathrm{s} & +\mathrm{e} & \text {-> } \\
& " \mathrm{Hause} & (-\mathrm{e} & -> & &
\end{array} \\
& \text { "Haus") } \\
& \text { (+s -> } \\
& \text { "Hauses") } \\
& \begin{array}{lll}
(-a+a ̈ & +r & -> \\
" H a ̈ u s e r "(+n & ->
\end{array} \\
& \text { "Häusern")) ) } \\
& \text { Cost: II } \\
& \begin{array}{rllll}
\text { (" " } & (+\mathrm{H}+\mathrm{a} & +\mathrm{u} & +\mathrm{s} & -> \\
\text { "Haus" } & (+\mathrm{e} & -> & \\
& \text { "Hause" } & (+\mathrm{s} & \text {-> }
\end{array} \\
& \text { "Hauses") } \\
& \begin{array}{lll}
(-\mathrm{a}+\mathrm{a} & +\mathrm{r} & +\mathrm{n} \\
\text { "Häusern" } & (-\mathrm{n} & ->
\end{array} \\
& \text { " Häuser") ) ) ) } \\
& \begin{array}{cllll}
\text { (") } & (+\mathrm{H}+\mathrm{a} & +\mathrm{u} & +\mathrm{s} & \text {-> } \\
& \text { "Haus" } & (+\mathrm{e} & -> &
\end{array} \\
& \text { "Hause" (+s -> } \\
& \text { "Hauses" (-a }+ \text { ä }-s \quad+r \quad-> \\
& \text { "Häuser" (+n -> } \\
& \text { " Häusern")) ) ) }
\end{aligned}
$$

## (M) Minimum Spelling Trees (2/2)

```
\(\begin{array}{rllll}\text { (" " } & (+\mathrm{H}+\mathrm{a} & +\mathrm{u} & +\mathrm{s} & -> \\ & \text { "Haus" } & (+\mathrm{e} & +\mathrm{s} & ->\end{array}\)
            "Hauses")
                ( +e ->
            "Hause")
            \(\begin{array}{ll}(-\mathrm{a}+\mathrm{a} & +\mathrm{r} \\ \text { " Häuser " } & -\mathrm{n} \\ \text { - }\end{array}\)
                    "Häusern")) )
                                    Cost: II
(" " \(\quad+\mathrm{H}+\mathrm{a}+\mathrm{u}+\mathrm{s} \quad->\)
    "Haus" (+e +s ->
            "Hauses" (-s ->
            "Hause ")
                            (-a +ä +r ->
                            "Häuser" \((+n \quad\)->
                                    "Häusern"))) ) Cost: II
\(\begin{array}{cccccc}\text { ( " " } \begin{array}{lllll}+\mathrm{H}+\mathrm{a} & +\mathrm{u} & +\mathrm{s} & -> & \\ & \text { "Haus" } & (-\mathrm{a} & +\mathrm{a} & +\mathrm{e}\end{array}+\mathrm{r} & \text {-> }\end{array}\)
        "Häuser " (+n ->
            "Häusern") )
        (+e
            "Hause " (+s ->
                                    "Hauses") ))
                                    Cost: II
```

The seventh MST is the cost 10 tree from M2.
M4. Haus is encoded from Häusern and all other words are encoded from "", for a cost of $5+5+6+6+7$ $=29$

