$$
\text{base cases} \quad
\begin{cases}
\emptyset & \text{the empty set of strings} \\
\varepsilon & \text{the set containing the empty string, } \{""\} \\
a & \text{the set containing only the string with only } a, \\
& \text{for some } a \in \Sigma, \ \{"a"\}
\end{cases}
$$

$$
\text{recursive cases} \quad
\begin{cases}
rs & \text{the set of strings made from concatening strings from } r \text{ and } s, \\
& \{x + y \mid x \in r \wedge y \in s\}, \text{for some regular expressions } r \text{ and } s \\
r|s & \text{the set of strings from } r \text{ or } s, \ r \cup s \\
& \text{for some regular expressions } r \text{ and } s \\
r* & \text{the set of strings made from concatenating 0 or more strings from } r \\
& \text{for some regular expression } r
\end{cases}
$$

Abbreviation	Meaning	Equivalence
[abc]	One occurrence of any of these symbols	(a|b|c)
[a-c]	One occurrence of any symbol in this range	(a|b|c)
$r?$	Optionally an occurrence of a string defined by r	$(r\|\varepsilon)$
r^5	5 occurrences of a string defined by r	$rrrrr$
$r^{3,5}$	Between 3 and 5 occurrences of a string defined by r	$(rrr\|rrrr\|rrrrr)$
$r+$	One or more occurrences of a string defined by r	$rr*$

- *DNA sequences:* `(A|C|G|T)*`.
- *Identifiers:* `(('|`ε`)[A-Za-z][A-Za-z0-9_])|_`.
- *Phone numbers:* `[2-9][0-9]`^{2}` - [2-9][0-9]`^{2}` - [0-9]`^{4}.
- *Dates:* `((1[0-2])|[1-9])/(30|31|([12][0-9])|[1-9])/[1-9][0-9]`^{0,3}. |
- *US Postal Addresses:* `[0-9]+ [NSEW]`^{0,2}` [A-Z][a-z]* (St|Ave|Rd|Ln|Dr|Blvd),([A-Z][a-z]*)*, [A-Z]`^{2}`[0-9]`^{5}.