CompSci 162
Spring 2023 Lecture 4.1:
Regular Languages
Question 14

- Given $\Sigma = \{a, b\}$
- Describe set of strings accepted by: $a^*ba^*$

- $a^*$: zero or more $a$
- $b$: exactly one $b$

All strings with exactly one $b$
Question 15

Given $\Sigma = \{a, b\}$

Describe the set of strings accepted by this:

$a\Sigma^* a \cup b\Sigma^* b \cup a \cup b$

All begin and end with $a$, $\text{len} \geq 2$

$\{ w \in \Sigma^* | \text{w starts and ends with the same symbol} \}$
Question 16

Given \( \Sigma = \{a, b\} \)

Give a regular expression:

every string that has “aab” as a substring

\[ \Sigma^* \text{aab} \Sigma^* \]
Question 17

Given $\Sigma = \{a, b\}$

Give a regular expression:
every string wherein every $a$ is followed by at least one $b$.

$$b^* \left( ab b^* \right)^* b^* \left( ab^+ \right)^*$$
This is you now

XKCD # 208 : Regular Expressions. Wait, forgot to escape a space. Wheeeeee[tap tap tap]eeeeee.