Though it can be a bit daunting at first, I have found math typesetting in LaTeX to be ultimately very flexible and useful. Inline mathematics such as $I = \langle x, k, y, S, S' \rangle$ where $x = \sum_{i=1}^{n} \log_2 f(i)$, $k = \left(\begin{array}{c} n^2 \\ 5 \end{array} \right) - \frac{1}{q}$, $y = \log_k g(x)$, $S = \{i \mid i \geq 53 \text{ and } \mathrm{q(i, y)} \oplus 3 = 0\}$, and $S' = \{3, 4, \ldots, \sqrt{k}\}$ can be done easily. Sometimes you want math to stand out like this:

$$S = \{i \mid i \geq 53 \text{ and } \mathrm{q(i, y)} \oplus 3 = 0\}$$

Or maybe you want numbers like this:

$$x = \begin{cases} 1 & n = 1 \\ k & n \geq r \times 5 \text{ or } k \neq i * 4 \\ 0 & \text{otherwise} \end{cases} \tag{1}$$

If it's Tuesday or Friday, you may want multi-line numbered equations like this:

$$\begin{aligned} (x+1)(x-1) &= x^2 - x + x - 1 \quad (2) \\ &= x^2 - 1 \quad (3) \\ &< x^2 \quad (4) \end{aligned}$$

On other days of the week, you may want something simpler, like being able to say $I = \langle x, k, y, S, S' \rangle$ where

$$\begin{aligned} x &= \sum_{i=1}^{n} \log_2 f(i) \\ k &= \left(\begin{array}{c} n^2 \\ 5 \end{array} \right) - \frac{1}{q} \\ y &= \log_k g(x) \\ S &= \{i \mid i \geq 53 \text{ and } \mathrm{q(i, y)} \oplus 3 = 0\} \\ S' &= \{3, 4, \ldots, \sqrt{k}\} \end{aligned}$$

One final somewhat obscure LaTeX bug before we finish our basic introduction to math in LaTeX: though useful, calligraphic font in math mode can misbehave badly. Hence, to ensure that an expression like $\mathcal{R} = k^2 - \sqrt{q_2}$ does not end up as $\mathcal{R} = \|^{\in} - \sqrt{\amalg_{\in}}$, you need to split the calligraphic command into a separate math-expression.