Curiosity: A Logarithm Makes Large Ratios Manageable

Curiosity Reading | CheAI Research Inc.

A concentration ratio of 1000 sounds forty times larger than a ratio of 25. In the stated concentration-cell model, however, potential responds to the logarithm of each ratio. That is why the two modeled potentials are much closer than the raw ratios.

This is a useful scientific habit: first ask what relationship the model actually uses, then compare the quantities it predicts. A large input ratio does not always make an output forty times larger.

Look for another graph or formula in science where the response is not proportional to the input. What would go wrong if you assumed every relationship was linear?