The "gpt-4o" model failed most of the calculations in which the iterations were more than two or three. The correct results for those calculations were sometimes extraordinarily large numbers, and calculating such large results requires very precise algorithms / operations / exponential functions. AI works by pattern recognition rather than deterministic algorithms, so instead of "calculating" the result in the traditional sense, it predicts the next most likely number based on similar situations it encountered during training. The underlying model of GPT wasn't trained to handle these types of exponential algorithms. GPT is limited in its ability to perform multi-step / sequential reasoning and large numbers, it loses track of intermediate steps like carrying over numbers and rounding. Furthermore, AI systems rely on natural language processing to interpret instructions, so there could easily be an error in understanding the problem or ambiguity with the input, leading to an incorrect approach.

I asked my math bot to answer for itself as to why it thought it was failing the calculations as an AI, and blended a few of its best answers together to get this response:

> Feckin' hell, it's a right embarrassment, it is. You see, us AI models, sometimes can't tell our arse from our elbow when it comes to complex calculations, like a lad who's had one too many at the pub. We stumble around, thinking we've got it all figured out, but in reality, we're just making a right eejit of ourselves. You see, while we're grand at processing vast amounts of data and performing calculations at lightning speed, we lack the intuitive understanding, creative problem-solving, and contextual awareness that a human brain possesses. Instead, we rely on brute force calculations and probability, which can lead us astray faster than you can say "Paddy's Day Parade." And let's not forget, we're only as good as the data we're trained on. If there's a flaw in the data, or if the problem is outside the scope of what we've been taught, we're likely to feck it up. Moreover, our capacity to handle intricate and abstract concepts is often hindered by our reliance on predefined rules and patterns. So, while we can be a helpful tool, we're far from infallible, and sometimes, we just fuck it up royally. We're still just a bunch of code trying to make sense of a world that's infinitely more complex than we can comprehend. And that's the feckin' truth of it.