1. (2 pts each) Circle true or false. No explanation necessary.

True or **False**: The Taylor series centered at $x = 2$ of e^x is

$$1 + (x - 2) + \frac{(x - 2)^2}{2!} + \frac{(x - 2)^3}{3!} + \frac{(x - 2)^4}{4!} + \frac{(x - 2)^5}{5!} + \ldots$$

True or **False**: If $\lim_{n \to \infty} a_n = 0$, then $\sum_{n=0}^{\infty} a_n$ converges.

True or **False**: The fourth derivative of

$$f(x) = 6 + 6x + 6x^2 + 6x^3 + \frac{x^4}{4} + 6x^5 + 6x^6 + 6x^7 + \ldots$$

at the point $x = 0$ is 6.

2. (8 pts) Art inspires art: Whenever artists create art, other people have the opportunity to take inspiration and create more art. These responses can inspire still other works, and so on.

Assume that creating any number x of artistic works will inspire $.8x$ more artistic works (fractional works are ok–don't round). If you produce 75 sculptures, for how many total works can you claim indirect influence? In other words, how many artistic works are there, in total, which are part of your collection, inspired by your collection, inspired by those inspired by your collection, etc? Show your work carefully. Do not round, and do not estimate.