

Let

$$\begin{aligned}
 f_0(x) &= x + 1 \\
 f_1(x) &= f_0^x(x) \\
 &= 2x \\
 f_2(x) &= f_1^x(x) \\
 &= x \cdot 2^x \cdot 2^{x \cdot 2^x} \cdot 2^{x \cdot 2^x \cdot 2^{2^x}} \cdot 2^{x \cdot 2^x \cdot 2^{2^x \cdot 2^{2^x}}} \dots \\
 f_3(x) &= f_2^x(x) \\
 g(x) &= f_x^x(x)
 \end{aligned}$$

Where $f^n(x)$ is the result of applying function composition, $f(f(x))$, n times.

Then

$$\begin{aligned}
 g(3) &= f_3^3(3) \\
 &= f_3(f_3(f_3(3))) \\
 &= f_3(f_3(f_2(f_2(f_2(3))))) \\
 &= f_3(f_3(f_2(f_2(f_1(f_1(f_1(3))))))) \\
 &= f_3(f_3(f_2(f_2(f_1(f_1(6)))))) \\
 &= f_3(f_3(f_2(f_2(f_1(12))))) \\
 &= f_3(f_3(f_2(f_2(24)))) \\
 &= f_3(f_3(f_2(f_1^{2^4}(24)))) \\
 &= f_3(f_3(f_2(402653184))) \\
 &= f_3(f_3(f_1^{402653184}(402653184))) \\
 &= f_3(f_3(402653184 \cdot 2^{402653184})) \\
 &= f_3(f_2^{(402653184 \cdot 2^{402653184})}(402653184 \cdot 2^{402653184})) \\
 &= f_2^{(f_2^{(402653184 \cdot 2^{402653184})}(402653184 \cdot 2^{402653184}))}(f_2^{(402653184 \cdot 2^{402653184})}(402653184 \cdot 2^{402653184}))
 \end{aligned}$$