Question 201: A fractal image

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Abstract
This note presents a fractal image for $f(z) = \ln(1 + g(z))$.

1. Introduction. Two integrals

$$\int_{0}^{\infty} \left( e^{-1/x^2} - e^{-2/i^2} \right) dx = \sqrt{\pi} \left( \sqrt{2} - 1 \right)$$ (1)

$$\int_{0}^{1} \left( \sqrt{\frac{1}{\ln (1+x/2)} - \sqrt{\frac{1}{\ln (1-x/2)}}} \right) x dx = 2\sqrt{\pi} \left( \sqrt{2} - 1 \right)$$ (2)

2. The functions $f(z)$ and $g(z)$.

$$g(z) = \left( \sqrt{\frac{1}{\ln (1+z/2)} - \sqrt{\frac{1}{\ln (1-z/2)}}} \right)$$ (3)

$$f(z) = \ln(1 + g(z))$$ (4)
3. Fractals for $f(z)$. 

Figure 1.
Figure 2.
Figure 3.
4. Fractals for $\ln(1 + z g(z))$. 

Figure 4.
References