Input:

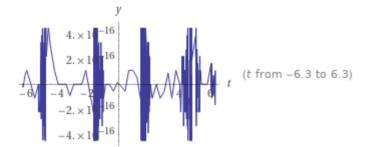
$$\begin{split} \log & \Big(1 + \exp \Big(-2 \tanh^{-1}(\cos(2\,t)) \Big) \Big) + 2 \times \frac{\tanh^{-1}(\cos(2\,t))}{\exp \Big(2 \tanh^{-1}(\cos(2\,t)) \Big) + 1} - \\ & \left(-\frac{1}{2} \left(1 - \cos(2\,t) \right) \log \left(\frac{1}{2} \left(1 - \cos(2\,t) \right) \right) - \frac{1}{2} \left(1 + \cos(2\,t) \right) \log \left(\frac{1}{2} \left(1 + \cos(2\,t) \right) \right) \right) \end{split}$$

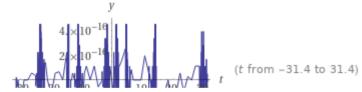
 $tanh^{-1}(x)$ is the inverse hyperbolic tangent function log(x) is the natural logarithm

Exact result:

$$\frac{1}{2} \left(1 - \cos(2t)\right) \log \left(\frac{1}{2} \left(1 - \cos(2t)\right)\right) + \frac{1}{2} \left(\cos(2t) + 1\right) \log \left(\frac{1}{2} \left(\cos(2t) + 1\right)\right) + \frac{2 \tanh^{-1}(\cos(2t))}{e^{2 \tanh^{-1}(\cos(2t))} + 1} + \log \left(e^{-2 \tanh^{-1}(\cos(2t))} + 1\right)$$

Plots:





Alternate forms:

More

A Plain Text

$$\begin{split} &\sin^2(t)\log(\sin^2(t)) + \cos^2(t)\log(\cos^2(t)) + \\ &\frac{2\tanh^{-1}(\cos(2t))}{e^{2\tanh^{-1}(\cos(2t))} + 1} + \log(e^{-2\tanh^{-1}(\cos(2t))} + 1) \end{split}$$

$$\begin{split} &\left(\frac{1}{2}\cos(2\,t) + \frac{1}{2}\right)\log\left(\cos^2(t)\right) + \frac{2\tanh^{-1}(\cos(2\,t))}{e^{2\tanh^{-1}(\cos(2\,t))} + 1} + \\ &\left(\frac{1}{2} - \frac{1}{2}\cos(2\,t)\right)\log\left(\sin^2(t)\right) + \log\left(e^{-2\tanh^{-1}(\cos(2\,t))}\left(e^{2\tanh^{-1}(\cos(2\,t))} + 1\right)\right) \end{split}$$

$$\begin{split} \Big((\cos(2\,t) + 1) \log \Big(\cos^2(t) \Big) \Big(e^{2\tanh^{-1}(\cos(2\,t))} + 1 \Big) + 2 \Big(2\tanh^{-1}(\cos(2\,t)) + \\ \Big(e^{2\tanh^{-1}(\cos(2\,t))} + 1 \Big) \log \Big(e^{-2\tanh^{-1}(\cos(2\,t))} \left(e^{2\tanh^{-1}(\cos(2\,t))} + 1 \right) \Big) \Big) - \\ (\cos(2\,t) - 1) \log \Big(\sin^2(t) \Big) \Big(e^{2\tanh^{-1}(\cos(2\,t))} + 1 \Big) \Big) \Big/ \Big(2 \Big(e^{2\tanh^{-1}(\cos(2\,t))} + 1 \Big) \Big) \end{split}$$

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