

$$\bigotimes_{k=0}^{n=3} \frac{1}{\sqrt{2}} \left( |0\rangle_k + e^{2\pi i((3/2^k) + (1/2^k))} |1\rangle_k \right) = \bigotimes_{k=0}^{n=3} (QFT|3+1\rangle)_k$$