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$$x = \left(\frac{2}{1}, \frac{4}{2}, \frac{8}{6}, \frac{16}{24}, \frac{32}{120}, \dots \right), y = \left(\frac{4}{1}, \frac{8}{2}, \frac{16}{6}, \frac{32}{24}, \frac{64}{120}, \dots \right)$$

$$x_k = \frac{2^k}{k!}$$

$$y_k = \frac{2^{k+1}}{k!}$$

$$\begin{aligned} \rho(x_k, y_k) &= \max_{k=1, \infty} \left| \frac{2^k - 2^{k+1}}{k!} \right| = \max_{k=1, \infty} \left| \frac{2^k(1-2)}{k!} \right| = \max_{k=1, \infty} \left| \frac{-2^k}{k!} \right| \\ &= \max_{k=1, \infty} \frac{2^k}{k!} \stackrel{k=1}{=} \frac{2}{1} = \underline{2}. \end{aligned}$$