Define the spherical modified Bessel functions by

$$i_n(x) = \sqrt{\frac{\pi}{2x}} I_{n+1/2}(x), \quad k_n(x) = \sqrt{\frac{2}{\pi x}} K_{n+1/2}(x)$$

Show that

$$i_0(x) = \frac{\sinh x}{x}, \quad k_0(x) = \frac{\exp(-x)}{x}$$