Maths of the Day

$$\int_0^\infty \int_0^\infty \left(\frac{e^{-x^2}-e^{-y^2}}{x^2-y^2}\right)\left(\frac{1-e^{-x^2}}{x^2}\right)\left(\frac{1-e^{-y^2}}{y^2}\right) dxdy$$

$$= \frac{3}{8}\pi^2 - \frac{\sqrt{2}}{2}\pi - \frac{9}{4}\pi \arcsin\left(\frac{1}{3}\right)$$