Evaluate the integral.[1]

$$\int_{-10}^{10} \frac{2\mathrm{e}^x}{\sinh(x) + \cosh(x)}\,\mathrm{d}x$$

This is a definite integral, so we'll (eventually) apply FTC, Part 2.

$$\begin{aligned}
\int_{-10}^{10} \frac{2\mathrm{e}^x}{\sinh(x) + \cosh(x)}\,\mathrm{d}x &= \int_{-10}^{10} \frac{2\mathrm{e}^x}{\dfrac{\mathrm{e}^x - \mathrm{e}^{-x}}{2} + \dfrac{\mathrm{e}^x + \mathrm{e}^{-x}}{2}}\,\mathrm{d}x \\
&= \int_{-10}^{10} \frac{2\mathrm{e}^x}{\dfrac{\mathrm{e}^x - \mathrm{e}^{-x} + \mathrm{e}^x + \mathrm{e}^{-x}}{2}}\,\mathrm{d}x \\
&= \int_{-10}^{10} \frac{2\mathrm{e}^x}{\dfrac{2\mathrm{e}^x}{2}}\,\mathrm{d}x \\
&= \int_{-10}^{10} \frac{2\mathrm{e}^x}{1} \cdot \frac{1}{\mathrm{e}^x}\,\mathrm{d}x \\
&= \int_{-10}^{10} 2\,\mathrm{d}x \\
&= [2x]_{x=-10}^{x=10} \\
&= (2 \cdot 10) - (2 \cdot (-10)) \\
&= 20 - (-20) \\
&= 40
\end{aligned}$$

Thus,

$$\int_{-10}^{10} \frac{2\mathrm{e}^x}{\sinh(x) + \cosh(x)}\,\mathrm{d}x = 40$$

[1] Stewart, *Calculus, Early Transcendentals*, p. 409, #40.