1. What are the domain and range of the function \(f(x) = \frac{1 + e^x}{1 - e^x}\)?

2. Find the absolute minimum value of the function \(e^x/x\) for \(x > 0\).

3. \(\int x e^{-x^2} \, dx\)

4. Find \(dy/dx\) if \(y = x^{\ln x}\).

5. \(\int_3^4 5! \, dt\)

6. \(\lim_{x \to 0} \frac{e^{ax} - e^{bx}}{x}\)

7. Draw a good graph of \(y = \ln(x^2 - 1)\).

8. Find the equation of the tangent line to the graph of \(2e^{xy} = x + y\) at the point \((0,2)\).

9. Find \(\lim_{n \to \infty} \sum_{k=1}^{n} \frac{e^{k/n}}{n}\)

10. \(\int_1^e \frac{x^2 + x + 1}{x} \, dx\)

11. Find the area of the region in the first quadrant bounded by the \(x\)-axis, the \(y\)-axis, the graph of \(y = \ln x\) and the tangent to the graph of \(y = \ln x\) at the point \((e, 1)\).

12. \(\int e^x (e^x + 1) \, dx\)

13. If you use the trapezoidal rule with \(n = 20\) to approximate the integral \(\int_0^3 e^x \, dx\), will your answer be (a little) bigger than or smaller than the actual answer? Why?

14. Prove that
\[
\int_{\pi/4}^{\pi/2} \frac{\sin x}{x} \, dx \leq \frac{\sqrt{2}}{2}.
\]