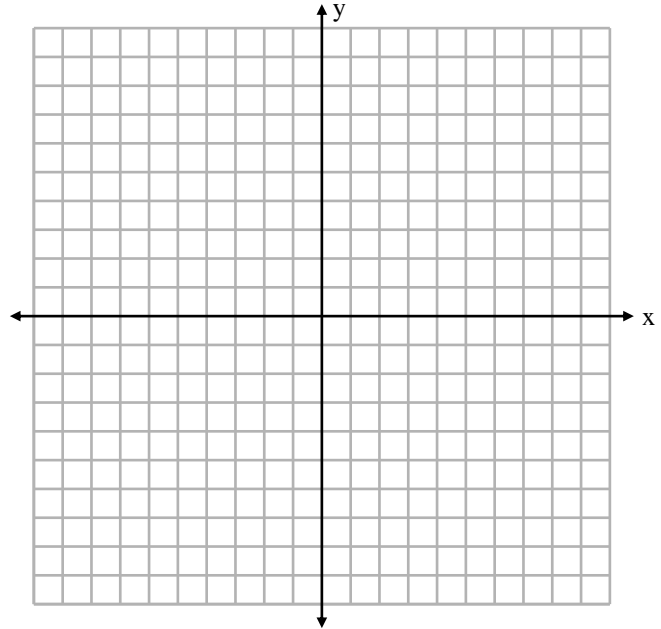


Instructions: Show all work. Use exact answers unless specifically asked to round. Answer all parts of each question.

1. Sketch the graph of $f(x) = -e^{x/2} + 2$. Then find the inverse of $f(x)$ and sketch that function on the same graph.



2. State the domain and range of the functions:

a. $f(x) = \left(\frac{1}{2}\right)^{x-1} - 2$

b. $g(x) = \log\left(\frac{x+1}{x-5}\right)$

3. Solve the equation for x .

a. $e^x = 1$

b. $\left(\frac{1}{2}\right)^x = 8$

c. $\log_2 x = 6$

4. Evaluate the expression $\log_5(3^{\log_3 5})$