Exercise 1: Evaluate each expression without using a calculator (1 point each)

1. \( \log_5 25 \)

2. \( \log_6 \left( \frac{1}{36} \right) \)

3. \( \ln e^2 \)

4. \( \ln 1 \)

5. \( \log 1 \)

6. \( \log_3 \frac{1}{\sqrt{3}} \)

7. \( 7^{\log_7 23} \)

8. \( \log_{11} 11 \)

9. \( \ln \frac{1}{e^6} \)

10. \( e^{\ln 5x^2} \)
Exercise 1: Write the following equation in its equivalent exponential form $2 = \log_3 x$
(1 point)

Exercise 2: Write the following equation in its equivalent logarithmic form $b^3 = 1000$
(1 point)

Exercise 3: Approximate the number $e^{2.3}$ using a calculator. Round your answer to 3 decimal places.
(2 points)

Exercise 4: Graph the logarithmic function: $f(x) = \log(2 - x)$. Hint: Begin by graphing $f(x) = \log x$. Then use transformations of this graph to graph the given function. What is the vertical asymptote? What is the domain and the range of the function?
(3 points)

Exercise 5: Graph the exponential function: $f(x) = 2^{x+2} - 1$. Hint: Begin by graphing $f(x) = \log x$. Then use transformations of this graph to graph the given function. What is the vertical asymptote? What is the domain and the range of the function?
(3 points)