

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. An exponential function has a y -intercept of 16 and passes through the point $(-2, 8)$.

(a) (3 points) Determine a formula for this exponential function.

(b) (2 points) Find the x -value for the intersection of the graph of this function with the line $y = 160$.

2. (3 points) Determine all values of x which satisfy the equation below.

$$\ln(\ln(2^x)) = 1$$

3. (2 points) The function $f(x) = 2 + x^3 + 3x^7 + \ln x$ is increasing for $x > 0$. What is the value of $f^{-1}(6)$? Explain your reasoning.