6. [10 points] Part of the graph of an <u>even</u> function $y = \ell(x)$ is shown below. Though the graph is only drawn for the interval [0, 8), the domain of ℓ is all real numbers except those where it has a vertical asymptote.



- **a**. [2 points] On the axes above, draw in the graph of $\ell(x)$ on the interval (-8, 0).
- **b.** [2 points] On the interval $(2, \infty)$, the function $\ell(x)$ is either a transformed exponential function or a transformed logarithm function. Circle which one, then briefly justify.

EXPONENTIAL	LOGARITHM

Justification:

c. [2 points] Consider the function $j(x) = \ell(2x) - 7$. Is j(x) even, odd, or neither, or is there not enough information to tell? Circle your answer, then briefly justify.

EVEN	ODD	NEITHER	NOT ENOUGH INFO
Justification:			

d. [4 points] Consider the function $m(x) = -2\ell((x-1))$. Carefully sketch the graph of m(x) on the entire interval (-1, 6). Make sure any **asymptotes** are clear, and mark the new locations of the **closed circles** in the original graph. Give your final answer on the axes to the **right**. The extra set of axes on the left may be used for scratchwork.

