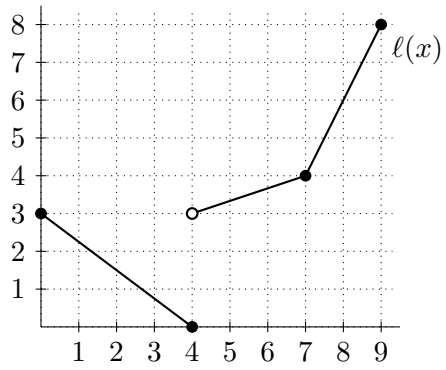
4. [10 points] Below is the graph of a piecewise-linear function $\ell(x)$.



For each of the following, circle the correct answer. You do not need to show your work.

a. [2 points] Find $g'(e^2)$, where $g(x) = \ell(\ln x)$.

$-3/4$ $\boxed{-3/(4e^2)}$ $2/e^2$ $-4/3$ 2

b. [2 points] Find $m'(5)$, where $m(x) = \ell(x)\cos(\pi x)$.

$\pi/3$ $-\pi/3$ $1/3$ $\boxed{-1/3}$ 0

c. [2 points] Find $h'(8)$, where $h(x) = \ell(\ell(x))$.

$\boxed{2/3}$ 4 2 $1/3$ $4/3$

d. [2 points] Find $i'(6)$, where $i(x) = \ell^{-1}(x)$.

$-3/121$ $-9/121$ $1/3$ 2 $\boxed{1/2}$

e. [2 points] Find $j'(2)$, where $j(x) = \dfrac{\ell(x)}{x^2}$.

$-9/4$ $9/4$ $\boxed{-9/16}$ $3/16$ $-3/16$