4. [8 points] The following parts are unrelated.

a. [4 points] The quantity of an intravenous drug in a patient's body, in mg, is given by $D(t) = 250(0.88)^t$, where t is the number of hours after the drug was administered.

What is the hourly decay rate of the drug? *Express in exact form, or rounded to at least 2 decimal places.*

_____

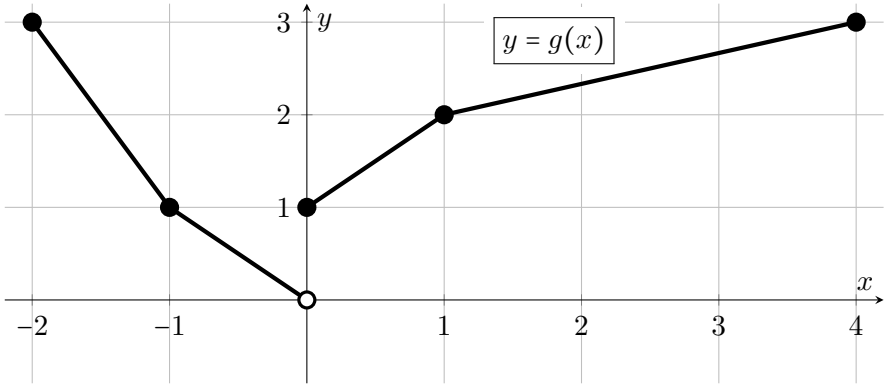
What is the ***continuous*** hourly decay rate of the drug? *Express in exact form, or rounded to at least 2 decimal places.*

_____

b. [4 points] The function $f(x)$ is given by the following formula:

$$f(x) = \ln(x) + 2$$

The entirety of the function $g(x)$ is given by the graph below.



Find the following values, or write NEI if there is "not enough information" to compute them. *Show all work.*

- $f^{-1}(g(0)) =$ _____

- All x such that $g(g(x)) = 2$: $x =$ _____