6. [10 points] For parts (a)–(d), indicate if each of the following statements is true, false, or if there is not enough information, by circling the correct answer. **Provide a *brief* explanation of your answer.**

a. [2 points] If the function $f(x)$ is odd, then the function $q(x) = (f(x))^2$ is even.

TRUE FALSE NOT ENOUGH INFORMATION

Explanation:

b. [2 points] The function $\log(x)$ **can't** take negative numbers as inputs, but it **can** have negative numbers as outputs.

TRUE FALSE NOT ENOUGH INFORMATION

Explanation:

c. [2 points] The function $f(x) = \log(x - h) + k$, where h, k are some constants, has a vertical asymptote at $x = h$.

TRUE FALSE NOT ENOUGH INFORMATION

Explanation:

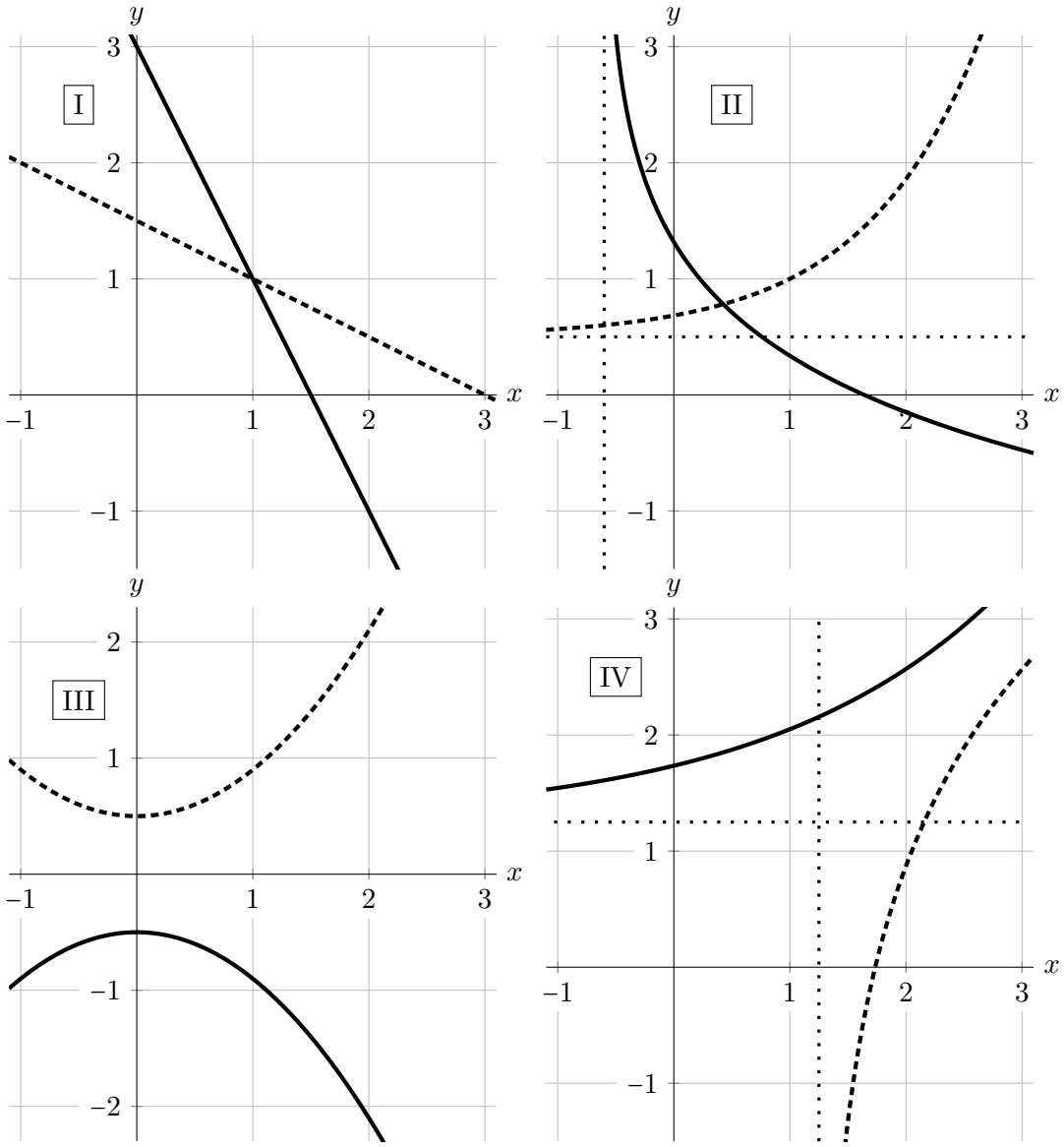
d. [2 points] If $Q(t)$ is an exponentially growing function, then the time it takes for the quantity to double gets shorter and shorter as time goes on.

TRUE FALSE NOT ENOUGH INFORMATION

Explanation:

This problem continues on the next page.

e. [2 points] On each set of axes below, a solid function and a dashed function are plotted. Dotted lines represent vertical or horizontal asymptotes.



For which pairs of functions shown is the solid function the inverse of the dashed function? *Circle all that apply. No justification required.*

I II III IV