

1) Given  $f(x) = -1 - \ln x$ . **\*\*Domain of  $\ln x$  is  $x > 0$  \*\***

For what values of  $x$  is:

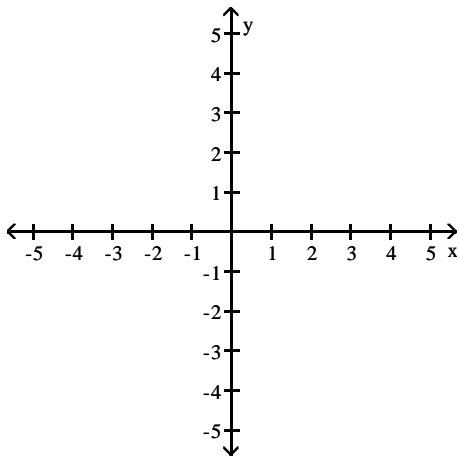
I)  $f(x)$  increasing?

II)  $f(x)$  decreasing?

III) the graph of  $f$  concave upward?

IV) the graph of  $f$  concave downward?

V) Sketch the graph.



2) Given  $f(x) = 3 - e^x$ , for what values of  $x$  is:

I)  $f(x)$  increasing?

II)  $f(x)$  decreasing?

III) the graph of  $f$  concave upward?

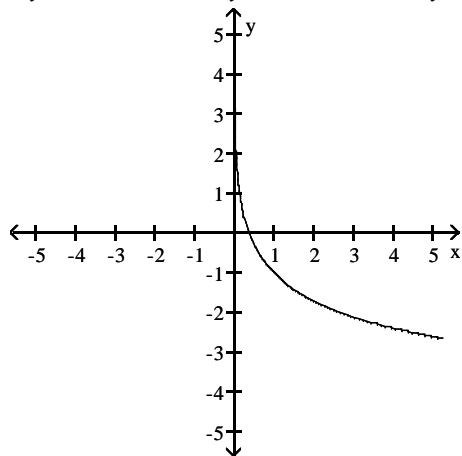
IV) the graph of  $f$  concave downward?

V) Graph the function

Answer Key

Testname: WORKSHEET 4.4 APPLICATIONS OF DERIV

- 1) I) Never    II)  $x > 0$     III)  $x > 0$     IV) Never



- 2) I) none  
II) all  $x \in (-\infty, \infty)$   
III) none  
IV) all  $x \in (-\infty, \infty)$

