

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

## Estimating Limits by Creating Different Representations

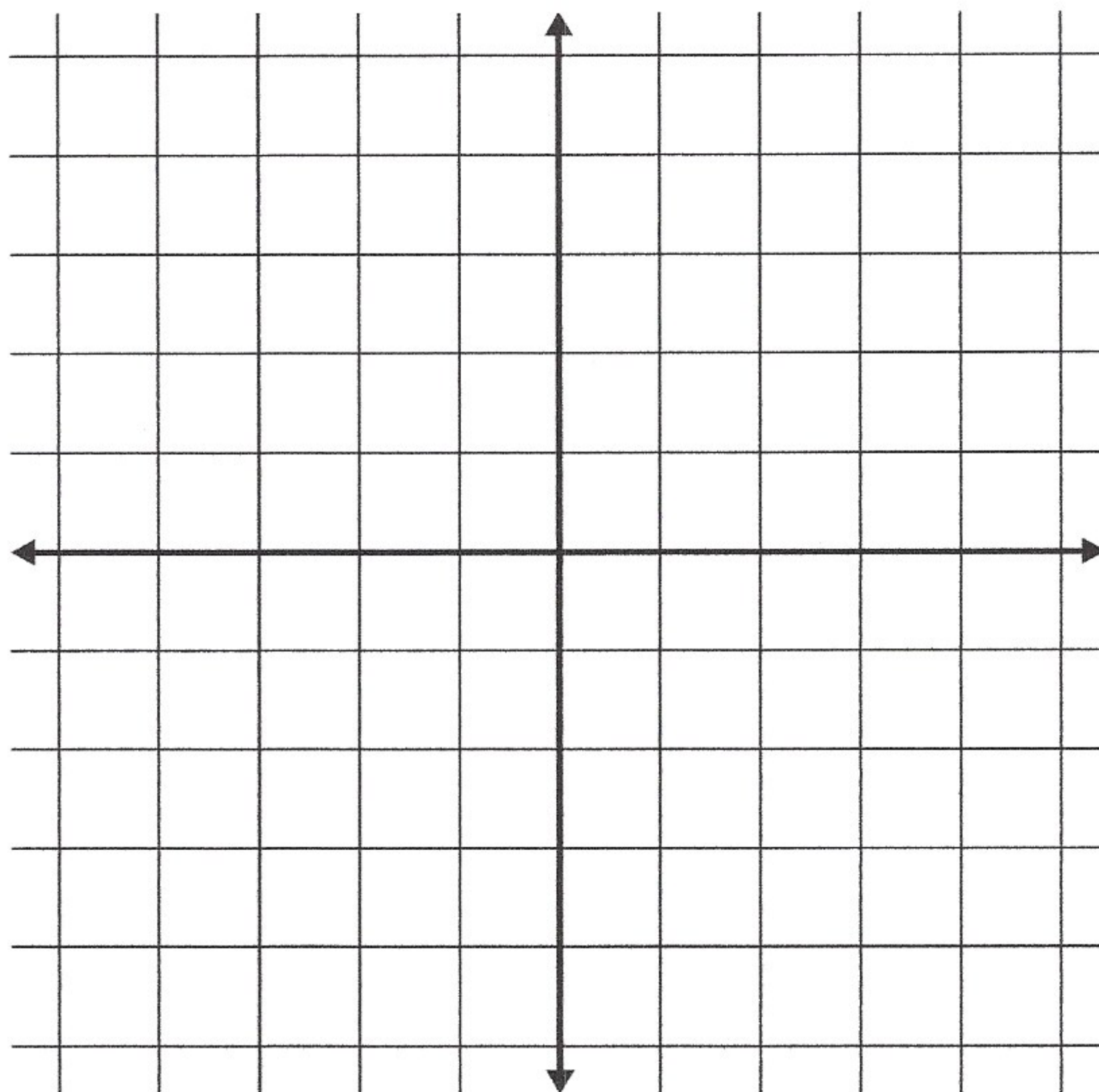
1. Use the function  $f(x) = \frac{e^x - 1}{x}$ .

a) Set up numerical table of values which get arbitrarily close to 0.

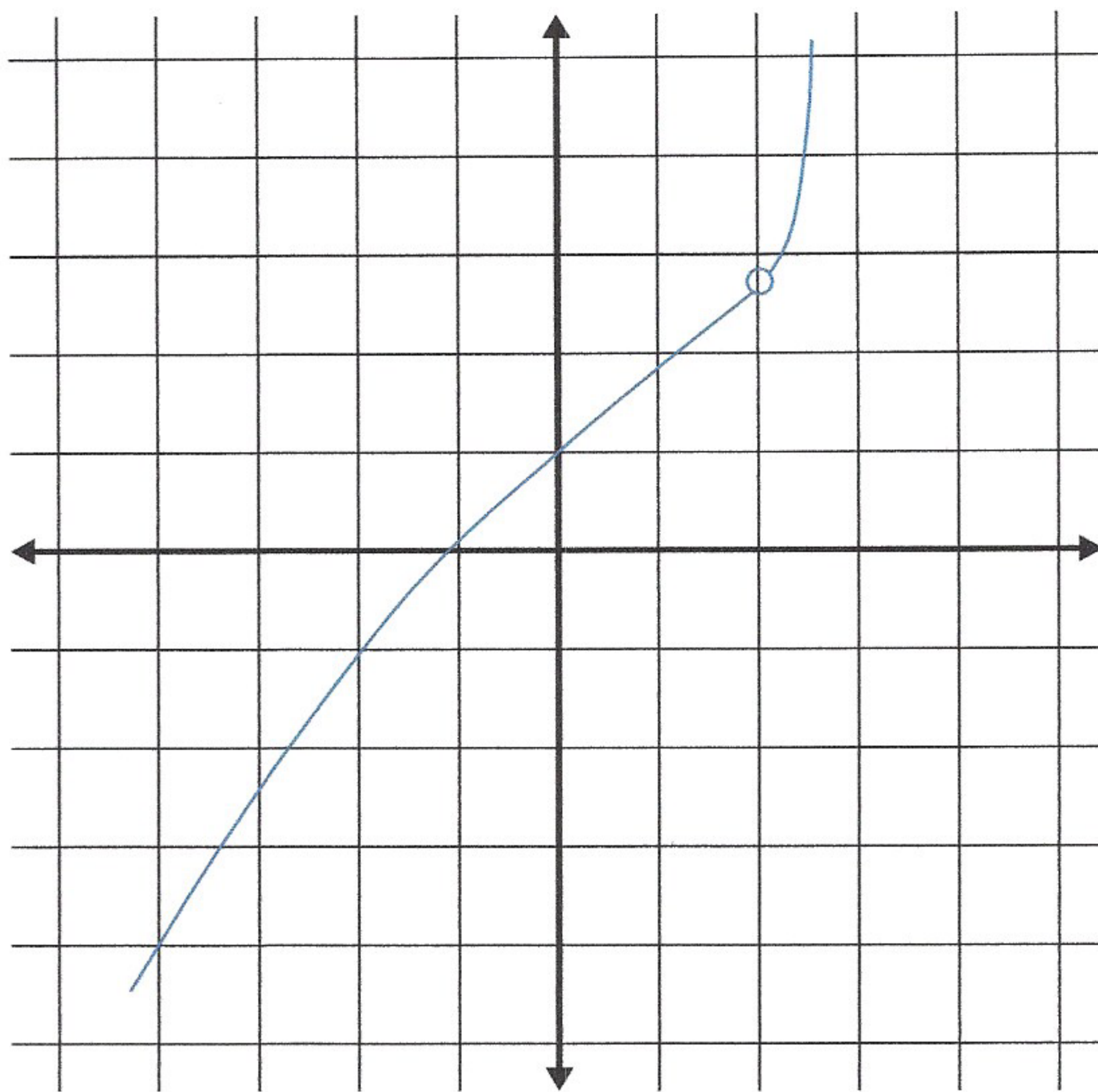
$x$							
$f(x)$							

b) Based on these values, estimate  $\lim_{x \rightarrow 0} \frac{e^x - 1}{x}$ .

c) Graph the function using the values above.



2. The graph of a function  $f$  is shown below.



- a) Estimate limit of  $f(x)$  as  $x$  approaches 2 based on the graph.
- b) Your value in part a is an estimate rather than the exact limit. What values are you sure the limit is between? What values would you estimate the limit is between?

3. Given the following table of values:

$x$	0.7	0.8	0.9	0.99	1	1.01	1.1	1.2	1.3
$f(x)$	1.67	1.76	1.91	1.98	5	4.03	4.12	4.23	4.36

Estimate the following:

a)  $\lim_{x \rightarrow 1^-} f(x) =$

b)  $\lim_{x \rightarrow 1^+} f(x) =$

c)  $\lim_{x \rightarrow 1} f(x) =$