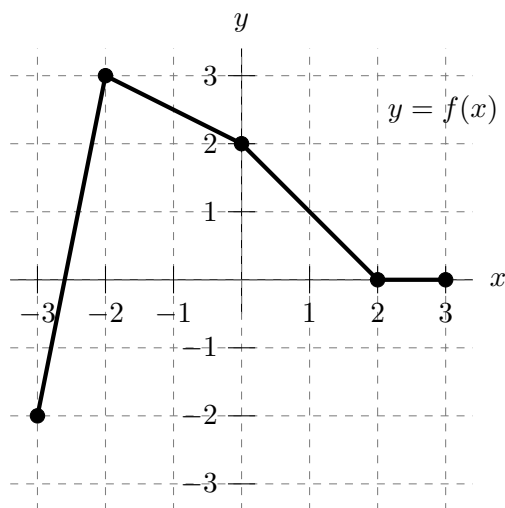


2. [12 points]

Let f be the piecewise linear function with graph shown below.



The table below gives several values of a differentiable function g and its derivative g' .

Assume that both $g(x)$ and $g'(x)$ are invertible.

x	-2	-1	0	2	5
$g(x)$	21	11	5	-1	-3
$g'(x)$	-12	-8	-4	-2	-0.4

You are not required to show your work on this problem. However, limited partial credit may be awarded based on work shown.

For each of parts **a.-f.** below, find the value of the given quantity. If there is not enough information provided to find the value, write “NOT ENOUGH INFO”. If the value does not exist, write “DOES NOT EXIST”.

a. [2 points] Let $j(x) = e^{g(x)}$. Find $j'(2)$.

Answer: $\frac{2}{e} \approx -0.736$

b. [2 points] Let $k(x) = f(x)f(x + 2)$. Find $k'(-1)$.

Answer: -3

c. [2 points] Let $h(x) = 3f(x) + g(x)$. Find $h'(-2)$.

Answer: **DOES NOT EXIST**

d. [2 points] Find $(g^{-1})'(2)$.

Answer: **NOT ENOUGH INFO**

e. [2 points] Let $m(x) = g(f(g(x)))$. Find $m'(2)$.

Answer: **NOT ENOUGH INFO**

f. [2 points] Let $\ell(x) = \frac{f(x)}{g(2x)}$. Find $\ell'(-1)$.

Answer: $\frac{21(-.5) - 2(2.5)(-12)}{21^2} \approx 0.1122$