1. [19 points] The graphs of the functions $f(x)$ and $g(x)$ are shown below.



Note that the graph of $f(x)$ is linear for $x<-2$ and $x>2$, and $g(x)$ is linear on $-3<x<1$ and $1<x<3$.
For each of the following parts, find the given limit. If any of the quantities do not exist (including the case of limits that diverge to $\infty$ or $-\infty$ ), write DNE. If the limit cannot be found based on the information given, write not enough info. You do not need to show any work.
a. [2 points] Find $\lim _{x \rightarrow-1} f(x)$.

Answer: $\qquad$ 2
b. [2 points] Find $\lim _{t \rightarrow 2^{-}} 2(f(t)-3)$.

Answer:
4
c. [2 points] Find $\lim _{x \rightarrow 1} f(x) g(x)$.

Answer:
DNE
d. [2 points] Find $\lim _{x \rightarrow \infty} f\left(e^{-x}\right)$.

Answer: $\qquad$
e. [2 points] Find $\lim _{x \rightarrow 2^{+}} g^{-1}(x)$.

Answer:
$-1$
f. [2 points] Find $\lim _{h \rightarrow 0} \frac{f(3+h)-f(3)}{h}$.

Answer:
0.5

The graphs of the functions $f(x)$ and $g(x)$ are included here for your convenience.


g. [3 points] Find all the values of $x$ with $-5<x<4$ at which the function $f(x)$ is not continuous.

Answer: $-2,0,2$
h. [2 points] What is the range of $y=g(x)$ ?

## Answer:

$\qquad$ $[0,5]$ $\qquad$
i. [2 points] For which of the following values of $x$ is $f^{\prime}(x)>0$ ? Circle all that apply.

$$
\begin{array}{llll}
x=-5 & x=-1 & x=1.5 & x=e \\
\text { NONE OF THESE }
\end{array}
$$

