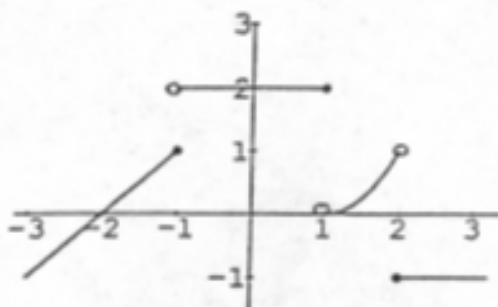
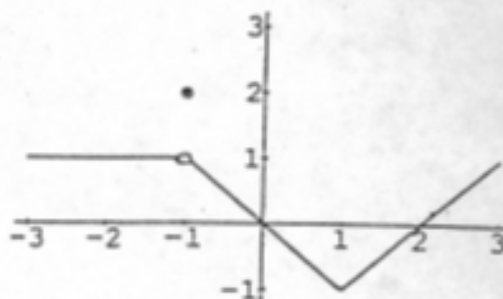


1. The graphs of the functions  $f$  and  $g$  are given below.



graph of  $f$



graph of  $g$

Determine whether the following limits exist. If they do, then find the limit.

- |   |   |
|---|---|
| a. $\lim_{x \rightarrow -1} f(x)$             | b. $\lim_{x \rightarrow 1} f(x)$              |
| c. $\lim_{x \rightarrow -1} g(x)$             | d. $\lim_{x \rightarrow 1} g(x)$              |
| e. $\lim_{x \rightarrow -1} f(x) + g(x)$      | f. $\lim_{x \rightarrow 0} 2f(x) + 3g(x)$     |
| g. $\lim_{x \rightarrow -1} f(x)g(x)$         | h. $\lim_{x \rightarrow 2} f(x)g(x)$          |
| i. $\lim_{x \rightarrow 0} \frac{f(x)}{g(x)}$ | j. $\lim_{x \rightarrow 0} \frac{g(x)}{f(x)}$ |
| k. $\lim_{x \rightarrow -2} g(f(x))$          | l. $\lim_{x \rightarrow -1} f(g(x))$          |

2. The graphs of functions  $f$  and  $g$  are those given in Problem 1 above. Determine whether the following limits exist and find the limit when it exists.

- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| a. $\lim_{x \rightarrow -1^-} f(x)$  | b. $\lim_{x \rightarrow -1^+} f(x)$   |
| c. $\lim_{x \rightarrow -1^-} g(x)$  | d. $\lim_{x \rightarrow -1^+} g(x)$   |
| e. $\lim_{x \rightarrow 0^-} f(x+2)$ | f. $\lim_{x \rightarrow -1^-} f(x^2)$ |