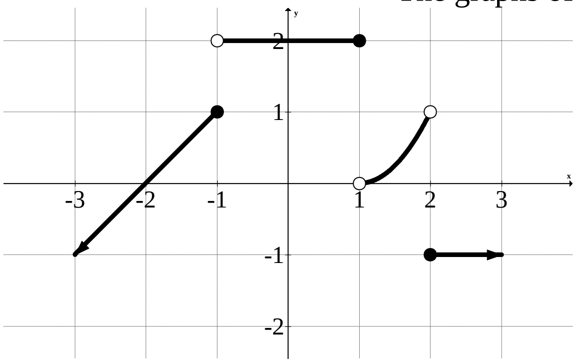
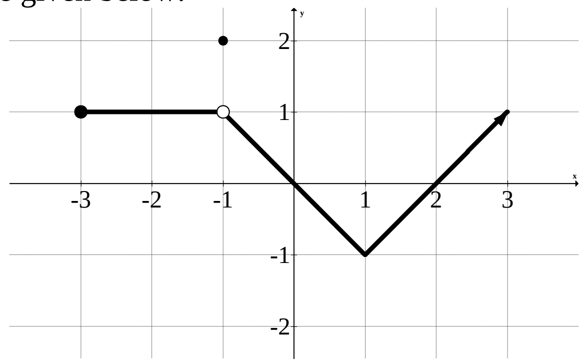
The graphs of f and g are given below.



$f(x)$



$g(x)$

1. Determine whether the following limits exist by investigating the left and right-side limits. If the two-sided limit exists, determine the value of the limit. If not, write DNE.

(a) $\lim_{x\to -1} f(x)$

$\lim_{x\to -1^-} f(x)$

$\lim_{x\to -1^+} f(x)$

(b) $\lim_{x\to 1} f(x)$

$\lim_{x\to 1^-} f(x)$

$\lim_{x\to 1^+} f(x)$

(c) $\lim_{x\to -1} g(x)$

$\lim_{x\to -1^-} g(x)$

$\lim_{x\to -1^+} g(x)$

(d) $\lim_{x\to 1} g(x)$

$\lim_{x\to 1^-} g(x)$

$\lim_{x\to 1^+} g(x)$

(e) $\lim_{x\to -1}\left[f(x)+g(x)\right]$

$\lim_{x\to -1^-}\left[f(x)+g(x)\right]$

$\lim_{x\to -1^+}\left[f(x)+g(x)\right]$

(f) $\lim_{x\to 0}\left[2f(x)+3g(x)\right]$

$\lim_{x\to 0^-}\left[2f(x)+3g(x)\right]$

$\lim_{x\to 0^+}\left[2f(x)+3g(x)\right]$

(g) $\lim_{x\to -1}\left[f(x)g(x)\right]$

$\lim_{x\to -1^-}\left[f(x)g(x)\right]$

$\lim_{x\to -1^+}\left[f(x)g(x)\right]$

(h) $\lim_{x\to 2}\left[f(x)g(x)\right]$

$\lim_{x\to 2^-}\left[f(x)g(x)\right]$

$\lim_{x\to 2^+}\left[f(x)g(x)\right]$

(i) $\lim_{x\to 0}\frac{f(x)}{g(x)}$

$\lim_{x\to 0^-}\frac{f(x)}{g(x)}$

$\lim_{x\to 0^+}\frac{f(x)}{g(x)}$

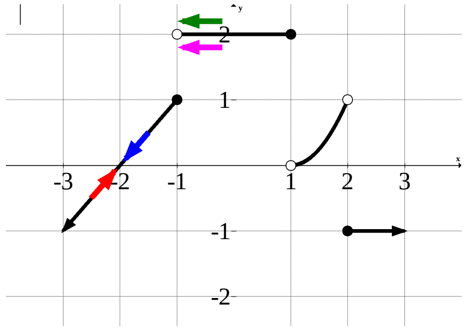
(j) $\lim_{x\to 0}\frac{g(x)}{f(x)}$

$\lim_{x\to 0^-}\frac{g(x)}{f(x)}$

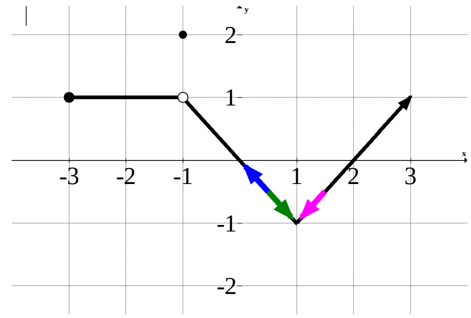
$\lim_{x\to 0^+}\frac{g(x)}{f(x)}$

2. Determine what should be written in $\boxed{?}$. Include the value and $^{\pm}$.

$\lim_{x\to 0^-} f(x+2)$ $\downarrow$ $\lim_{x\to \boxed{?}} f(x)$	$f(-0.1+2)=f(1.9)$ $f(-0.01+2)=f(1.99)$ $f(-0.001+2)=f(1.999)$	$\lim_{x\to -1^-} f\left(x^2\right)$ $\downarrow$ $\lim_{x\to \boxed{?}} f(x)$	$f\left(\left[-1.1\right]^2\right)=f(1.21)$ $f\left(\left[-1.01\right]^2\right)=f(1.0201)$ $f\left(\left[-1.001\right]^2\right)=f(1.002001)$



$f(x)$



$g(x)$

$$\lim_{x\to -2} g\left(f(x)\right)$$

$$\lim_{x\to 1} f\left(g(x)\right)$$

$$\lim_{x\to -2^-} g\left(f(x)\right)$$

$$\lim_{x\to -2^-} f(x) = 0^-$$

$$\lim_{x\to 0^-} g(x) = 0^+$$

$$\downarrow$$

$$\lim_{x\to 2^-} g\left(f(x)\right) = 0$$

$$\lim_{x\to -2^+} g\left(f(x)\right)$$

$$\lim_{x\to -2^+} f(x) = 0^+$$

$$\lim_{x\to 0^+} g(x) = 0^-$$

$$\downarrow$$

$$\lim_{x\to -2^+} g\left(f(x)\right) = 0$$

$$\lim_{x\to 1^-} f\left(g(x)\right)$$

$$\lim_{x\to 1^-} g(x) = -1^+$$

$$\lim_{x\to -1^+} f(x) = 2$$

$$\downarrow$$

$$\lim_{x\to 1^-} f\left(g(x)\right) = 2$$

$$\lim_{x\to 1^+} f\left(g(x)\right)$$

$$\lim_{x\to 1^+} g(x) = -1^+$$

$$\lim_{x\to -1^+} f(x) = 2$$

$$\downarrow$$

$$\lim_{x\to 1^+} f\left(g(x)\right) = 2$$