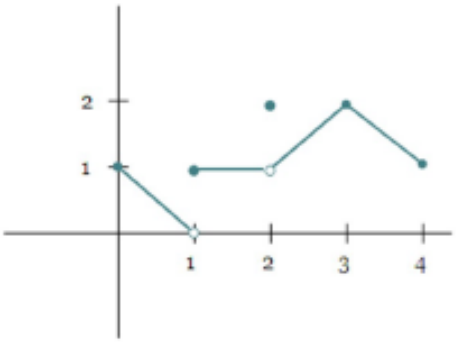
Pre-Calculus

Notes: Evaluating Limits Graphically

The limit as x approaches c exists iff and only if the left and right hand limit are the same.

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



Ex 1) a) $\lim_{x\to 1^-} f(x) =$ e) $\lim_{x\to 2^-} f(x) =$ i) $\lim_{x\to 3^-} f(x) =$ m) $\lim_{x\to 2.5} f(x) =$

b) $\lim_{x\to 1^+} f(x) =$ f) $\lim_{x\to 2^+} f(x) =$ *j*) $\lim_{x\to 3^+} f(x) =$ n) $\lim_{x\to 4^-} f(x) =$

c) $\lim_{x\to 1} f(x) =$ g) $\lim_{x\to 2} f(x) =$ *k*) $\lim_{x\to 3} f(x) =$ o) $\lim_{x\to 4^+} f(x) =$

d) $f(1) =$ h) $f(2) =$ l) $f(3) =$ p) $\lim_{x\to 4} f(x) =$

Ex 2) $f(x) = \frac{3}{x-2}$

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

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

c) $\lim_{x\to 2} f(x) =$

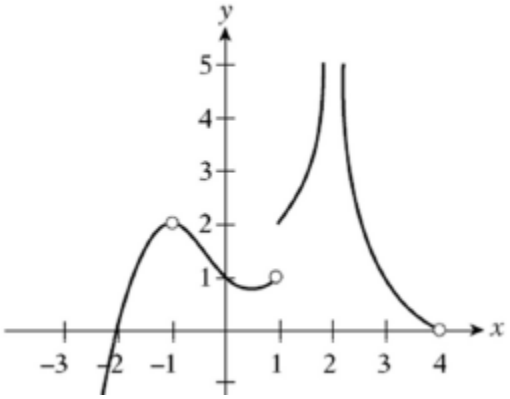
d) $\lim_{x\to \infty} f(x) =$

Ex 3)

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

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

c) $\lim_{x\to 2} f(x) =$



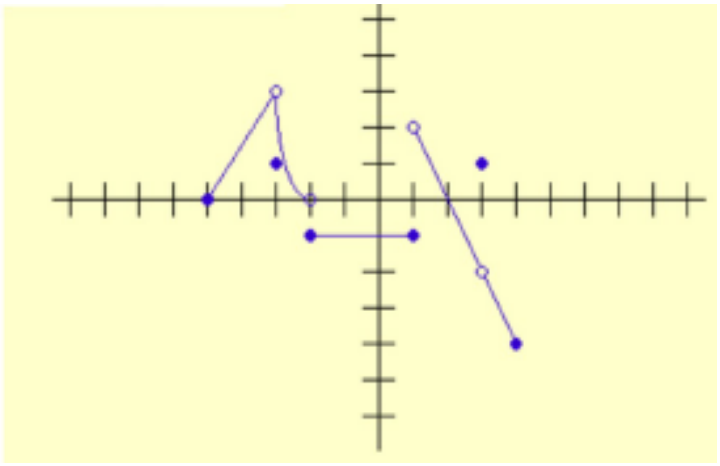
Ex 4) a) $\lim_{x\to 3} f(x) =$ b) $\lim_{x\to 0} f(x) =$

c) $\lim_{x\to -3} f(x) =$ d) $\lim_{x\to 1^+} f(x) =$

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

g) $\lim_{x\to -2^-} f(x) =$ h) $\lim_{x\to 4} f(x) =$

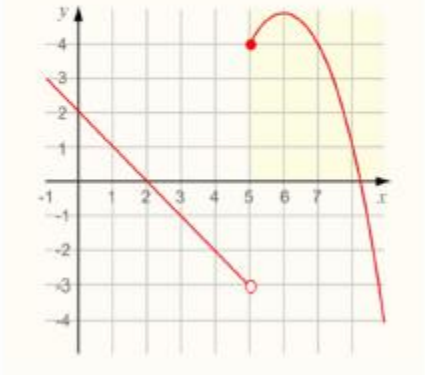
i) $\lim_{x\to 2} f(x) =$ j) $\lim_{x\to -2^+} f(x) =$



Ex 5) a) $\lim_{x\to 5^-} f(x) =$ b) $\lim_{x\to 5^+} f(x) =$

c) $\lim_{x\to 5} f(x) =$ d) $f(5) =$

$$f(x) = \begin{cases} -x+2 & \text{for } x < 5 \\ -x^2+12x-31 & \text{for } x \geq 5 \end{cases}$$



"Evaluating Limits Graphically" worksheet