

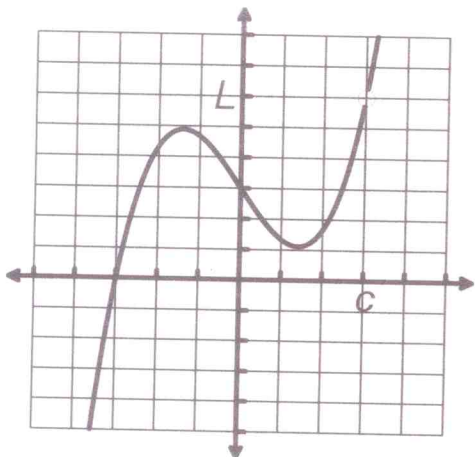
# Limits

p. 98 - 105 (2.2)

#3

Verbally If  $f(x)$  becomes arbitrarily close to a single number  $L$  as  $x$  approaches  $c$  from either side, then the limit of  $f(x)$  as  $x$  approaches  $c$  is  $L$ .

## Graphically



## Analytically

$$\lim_{x \rightarrow c} (f(x) = L)$$

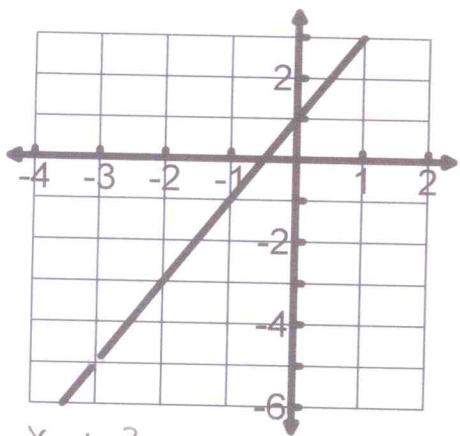
## Numerically

x	-7	-7.01	-7	-7	-6.99
f(x)	2.594	2.597	2.599	2.598	2.596

x	2.999	2.99	3	3.01	3.001
g(x)	8.93	9.988	ERROR	9.991	9.957

1. Use the graph below to find the limit (if it exists) for

$$\lim_{x \rightarrow -3} \frac{2x^2 + 7x + 3}{x + 3} = \frac{(2x+1)(x+3)}{x+3} = -5$$



$x + 3$

$$\begin{array}{r|l} 2x & 2x^2 \quad | \quad 6x \\ +1 & 1x \quad | \quad 3 \end{array}$$

\*\*2. Use the graph below to find the following limits.

a)  $\lim_{x \rightarrow a} H(x) = 1$       b)  $\lim_{x \rightarrow b} H(x) = 5$

