

## DEFINITION OF A HORIZONTAL ASYMPTOTE (§2.2)

The line  $y = b$  is a **horizontal asymptote** of the graph of a function  $y = f(x)$  if either

$$\lim_{x \rightarrow \infty} f(x) = b \quad \text{or} \quad \lim_{x \rightarrow -\infty} f(x) = b$$

In other words ... if the *end behavior* of a function approaches a number, then that function has a horizontal asymptote at that number.