

6.)  $f(x) = \frac{x^2 - 9}{x + 3} = \frac{\cancel{(x+3)}(x-3)}{\cancel{(x+3)}}$

$x+3=0$   
**Hole(s):**  $(-3, -6)$  =  $x-3$

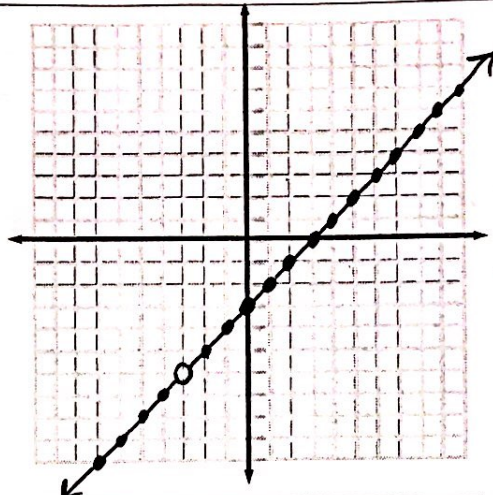
**Vertical Asymptote:** NA

**Horizontal Asymptote:** NA

**Domain:**  $(-\infty, -3) \cup (-3, \infty)$

**Range:**  $(-\infty, -6) \cup (-6, \infty)$

**End Behavior:**  
As  $x \rightarrow \infty$ ,  $f(x) \rightarrow \infty$   
As  $x \rightarrow -\infty$ ,  $f(x) \rightarrow -\infty$



Test Intervals			
x			
f(x)			

## SUMMARY

**What is an asymptote?**

**How do you decide on what the vertical asymptote(s) is/are going to be?**

**How do you decide on what the horizontal asymptote(s) is/are going to be?**

**When does a hole occur in a rational function?**

**How do you locate the intercepts of a rational function?**