

To find the limit of  $f(x)$  as  
 $x \rightarrow c$

Is  $c$  a number?

NO, IT IS INFINITE

Find the highest powers of  $x$  in  
the numerator and  
denominator, ignore the rest,  
and simplify

Is  $f$   
piecewise-defined?

Compute  
both one-  
sided limits.

Are they the  
same number?

Did you get  
a number?

That  
number is  
the limit

The limit  
DNE

NO

Where does  $x$   
remain?

NUMERATOR

DENOMINATOR

The limit is 0

The limit is  
 $f(c)$

YES

Does  $f(c)$   
exist?

NO

Do you get 0 in the  
numerator too?

NO

The answer will be  $\infty$ ,  $-\infty$ , or  
DNE, depending on the sign  
of  $f(x)$

Factor both  
numerator and  
denominator, and  
cancel  $(x-c)$