## **Continuity Preparation**

Have completed by tomorrow (beginning of class): From the graphs below, write down the domain of each function and then answer

the questions in the columns labeled 1-3. Make an educated guess about whether the function is continuous at x = 3.

the questions in the columns labeled 1-3	<b>Function</b>	1	2	3	
<u>Graph</u>	What is the domain?	What is f(3)?	What is $\lim_{x\to 3} f(x)$ ?	Does $f(3) = \lim_{x \to 3} f(x)$ ?	Is $f$ continuous at $x = 3$ ?
8 6 y 4 2 1 0 1 2 3 4 5	$f(x) = \frac{x^2 - 9}{x - 3}$				
y 4- 2- 5 4 3 2 -1 2 3 4 5	$f(x) = \frac{1}{x - 3}$				
8 6 y 4 2 1 0 1 2 4 6	$f(x) = \begin{cases} \frac{1}{x-3}, & x \neq 3 \\ -1, & x = 3 \end{cases}$				
8 6 9 4 9 2 1 0 1 2 3 4 5 2 2 1 0 1 2 3 4 5	$f(x) = \begin{cases} \frac{x^2 - 9}{x - 3}, & x \neq 3 \\ -1, & x = 3 \end{cases}$				
5 4 3 2 1 0 1 2 3 4 6 2	$f(x) = \begin{cases} \frac{x^2 - 9}{x - 3}, & x \neq 3\\ 6, & x = 3 \end{cases}$				
y 4  2  -5 -4 -3 -2 -1 U 1 2 3 4 5	$f(x) = \begin{cases} 0, & x < 3 \\ 1, & x \ge 3 \end{cases}$				