LIMITS & CONTINUITY – PART II (1.7 & 1.8) NAME_____

1. Find each limit. Include a table of values to illustrate your answer. Include two tables if you need to consider a two sided limit.

A. $\lim_{y\to\infty}\frac{\sqrt{y^2+2}}{5y-6}=$ 0.2

one table
one-sided limit

y	f(y)
1000	
10000	
100000	
1000000	

B. $\lim_{t\to1^+}\frac{|1-t|}{1-t}=$ −1

one table - one-sided limit

t	f(t)
1.1	
1.01	
1.001	
1.0001	
1.00001	

C. $\lim_{x\to0}(1+x)^{1/x}=$ e

left hand side

x	f(x)
−0.1	2.86792
−0.01	2.731999
−0.001	2.71964
−0.0001	2.7184
−0.00001	

right hand side

x	f(x)
0.1	2.59374
0.01	2.7048
0.001	2.7169
0.0001	
0.00001	

D. $\lim_{\theta\to0}\frac{\sin(2\theta)}{\theta}=$ 2

left side

x	f(x)
−0.1	
−0.01	
−0.001	
−0.0001	
−0.00001	

right side

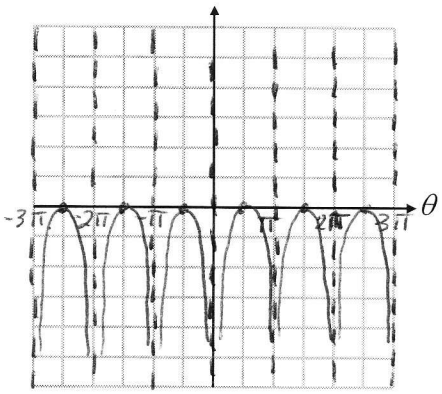
x	f(x)
0.1	
0.01	
0.001	
0.0001	
0.00001	

2. Find each of these limits. Use the limits to sketch a graph. Be sure to include any asymptotes, holes, or other important characteristics.

$g(\theta)=\ln|\sin\theta|$

$\lim_{\theta\to n\pi^+} g(\theta)=$ For $n=0,\ \pm1,\ \pm2,\ \pm3,\ \cdots$

$\lim_{\theta\to n\pi^-} g(\theta)=$ For $n=0,\ \pm1,\ \pm2,\ \pm3,\ \cdots$



right side

θ	ln|sinθ|
3.2	
3.15	
3.145	
3.1416	

left side

θ	ln|sinθ|
3.1	
3.14	
3.141	
3.1413	