Bridges
Math 124

Name _____

LIMITS AND CONTINUITY WORKSHEET
[1.7 & 1.8]

Generate a table of values to find each of these limits.

1. $\lim_{x\to 0}(1+x)^{1/x} =$ _____

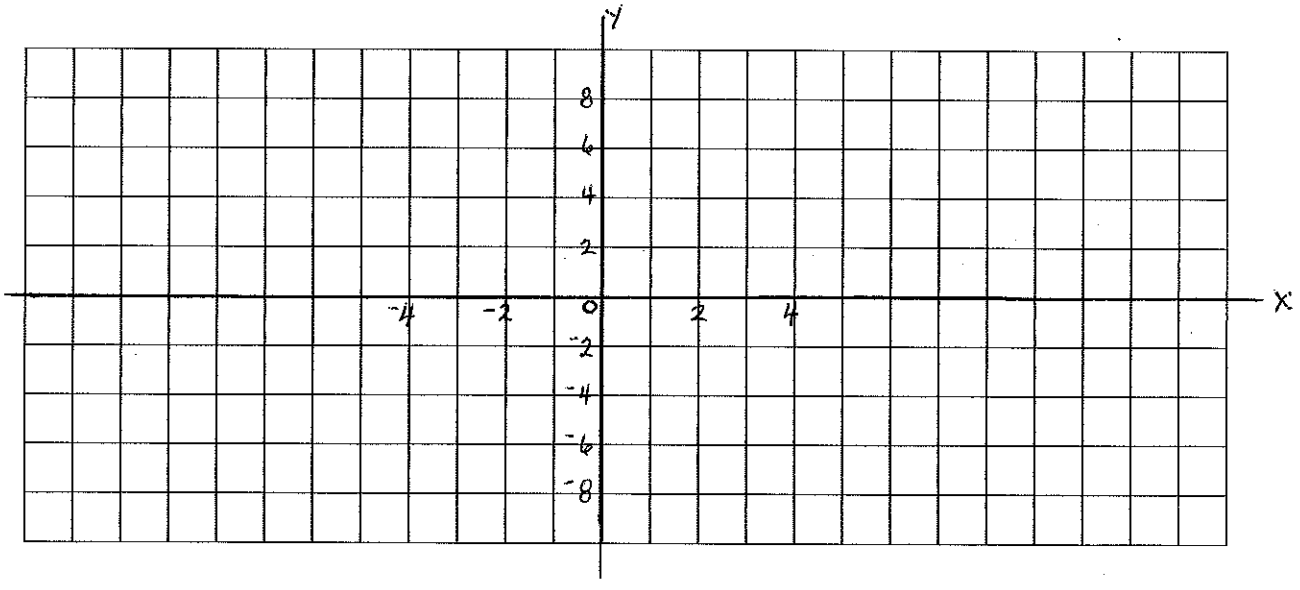
2. $\lim_{\theta\to 0}\left(\frac{\sin(2\theta)}{\theta}\right) =$ _____

3. $\lim_{t\to 1}\left(\frac{|1-t|}{1-t}\right) =$ _____

Neatly and accurately graph $f(x)$. Use the graph to find each of these limits. On your graph, label any asymptotes, holes, or other important characteristics.

4. $f(x) = \frac{x-2}{|x|-2}$ $\lim_{x\to 2^+} f(x) =$ ___, $\lim_{x\to 2^-} f(x) =$ ___, $\lim_{x\to 2} f(x) =$ ___,

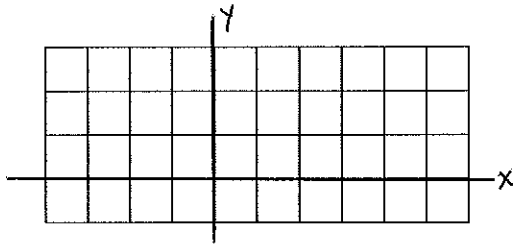
$\lim_{x\to -\infty} f(x) =$ ___, $\lim_{x\to \infty} f(x) =$ ___, $\lim_{x\to -2^-} f(x) =$ ___, $\lim_{x\to -2^+} f(x) =$ ___



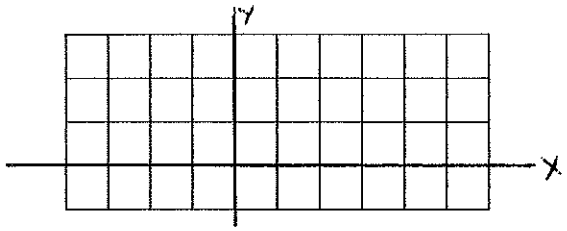
[1.7–1.8]

In each case, neatly sketch a graph with the given characteristics.

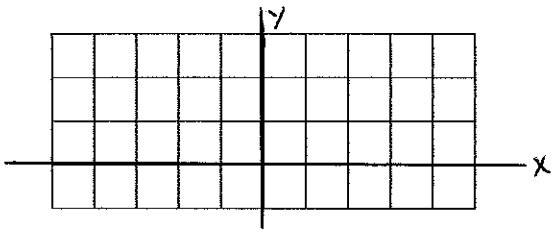
5. $f(4)$ is undefined and $\lim_{x\to 4} f(x) = 2$.



6. $f(3) = 2$ and $\lim_{x\to 3} f(x)$ does not exist.



7. $f(1) = 3$ and $\lim_{x\to 1} f(x) = -1$.



Find the value of k that would make the function continuous in each case. Explain how you found your value.

8. $$g(x) = \begin{cases} \dfrac{e^x - 1}{x} & x \neq 0 \\ k & x = 0 \end{cases}$$

9. $$h(x) = \begin{cases} \dfrac{\sin(5\pi x) - 1}{2x - 1} & x \neq \dfrac{1}{2} \\ 2k + 3 & x = \dfrac{1}{2} \end{cases}$$