

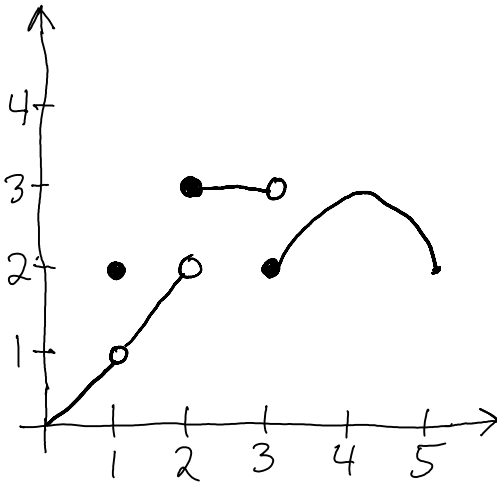
Limits and Continuity Worksheet

Tuesday, September 18, 2012

Names and student numbers for group (minimum of 2):

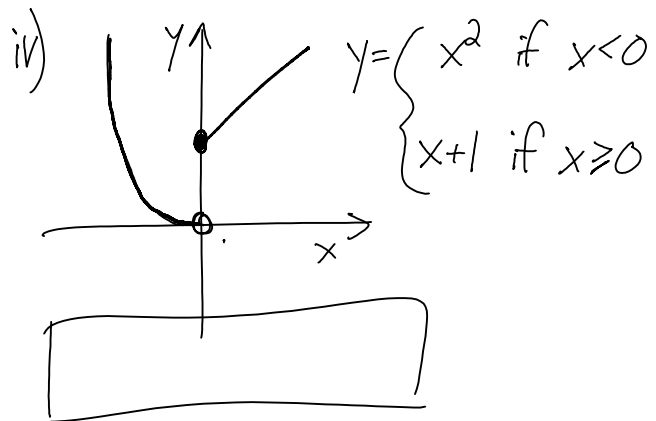
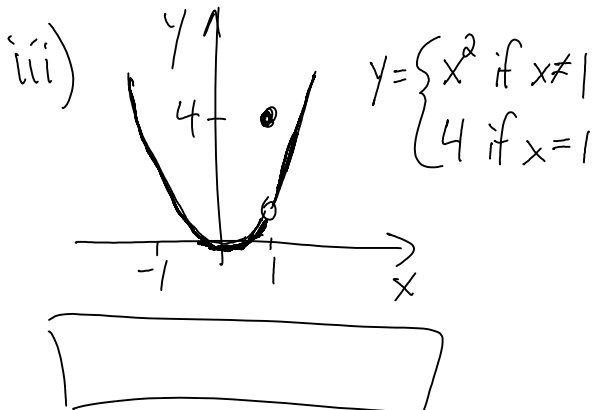
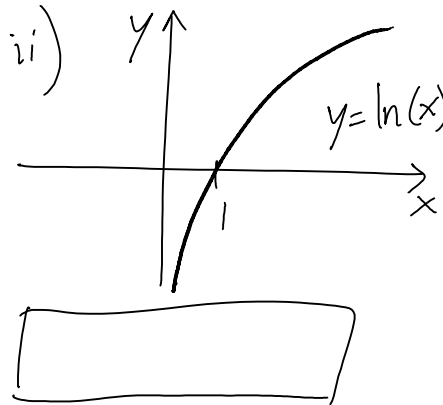
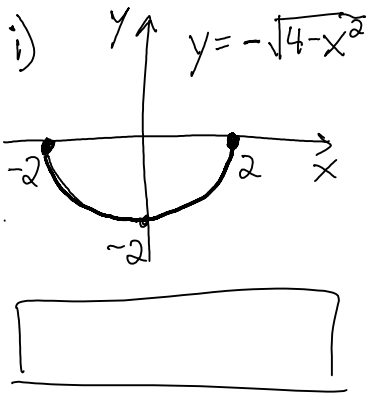
1. _____
- _____
2. _____
- _____
3. _____
- _____

1. Use the graph of $g(x)$ given in the figure to find the following values, if they exist. If a limit does not exist, explain why.



- i. $\lim_{x \rightarrow 1} g[x]$
- ii. $\lim_{x \rightarrow 2^-} g[x]$
- iii. $\lim_{x \rightarrow 3} g[x]$
- iv. $\lim_{x \rightarrow 4} g[x]$

2. For each of the graphs drawn below, determine where the function is continuous by using interval notation. If it is not continuous somewhere, give a reason why (try using limit notation for this).



3. Is the following function $f(x)$ continuous for all real values of x (looking not just at $x=2$)? For full credit, you must clearly justify your answer.

$$f(x) = \begin{cases} \frac{x^2 - 4}{x - 2} & \text{if } x \neq 2 \\ 0 & \text{if } x = 2 \end{cases}$$