Quiz 1A, Calculus I - Calculators okay

Dr. Graham-Squire, Spring 2014
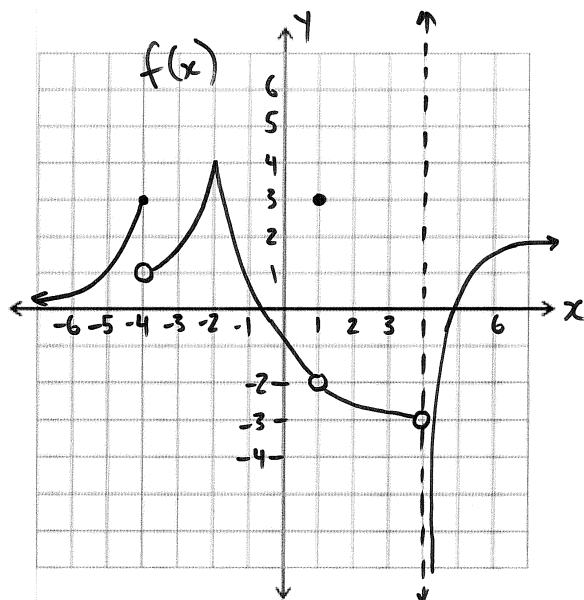
Name: _____

1. (6 points) Evaluate the limits by hand. You can check your work with a calculator, but you must evaluate the limit by hand and SHOW YOUR WORK for full credit!

   (a) $\lim\limits_{x \to 7} \left(\dfrac{2}{x-7} - \dfrac{14}{x(x-7)} \right)$

   (b) $\lim\limits_{x \to 4^-} \dfrac{x^2 - 16}{x^2 - 8x + 16}$

   (c) $\lim\limits_{x \to 4^+} \dfrac{\sqrt{x} - 2}{x - 2}$

2. (4 points) (a) Use the graph of $f(x)$ to calculate the expressions below. If the limits does not exist, write ∞, $-\infty$, or DNE, whichever is most appropriate. You do not need to show your work, though an explanation can get partial credit if your answer is wrong.

(i) $\displaystyle\lim_{x \to 4^+} f(x) =$

(ii) $\displaystyle\lim_{x \to \infty} f(x) =$

(iii) $\displaystyle\lim_{x \to (-2)} f(x) =$

(iv) $\displaystyle\lim_{x \to (-4)^+} f(x) =$

(v) $f(1) =$

(b) Find one place where $f(x)$ is discontinuous and explain why the function is discontinuous. You must use at least part of the <u>definition</u> of continuity in your explanation in order to receive full credit.