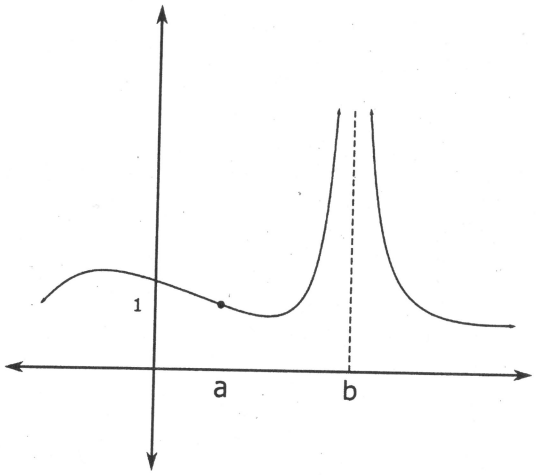
MTH130 - Quiz #1 **Name:** Solu

For full credit, you must <u>show all work</u> and <u>circle</u> your final answer.

1 Use the following picture to determine $\lim_{x\to a} f(x)$, $f(a)$, and $\lim_{x\to b} f(x)$.



$f(a) = 1$

$\lim_{x\to a} f(x) = 1$

$\lim_{x\to b} f(x) =$ D.N.E

2 Determine the following limits.

a) $\lim_{x\to 1} \dfrac{x-1}{x+1} = \dfrac{0}{1} = 0$

b) $\lim_{x\to\infty} \dfrac{x^2+3x+1}{x^4+5x^2+8x+2} = 0$ deg(top) < deg(bot)

3 Determine for which values the following function is discontinuous.

$$f(x) = \frac{(x-2)}{(x-3)(x+5)}$$

discontinuous at $x=3$ $x=-5$