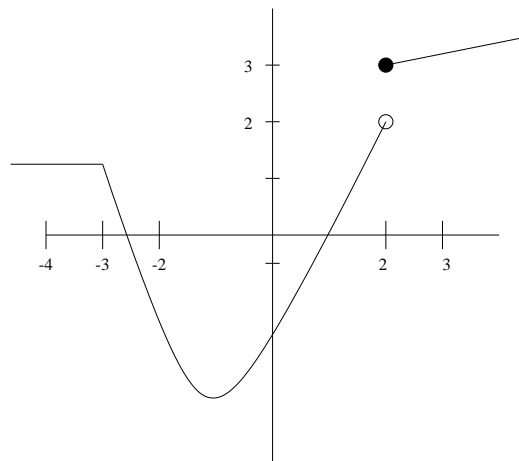Name: _____

Calculators are not allowed!

1. Consider the function $f(x)$ whose graph is indicated below

(a) $\lim_{x \to 2^+} f(x) =$

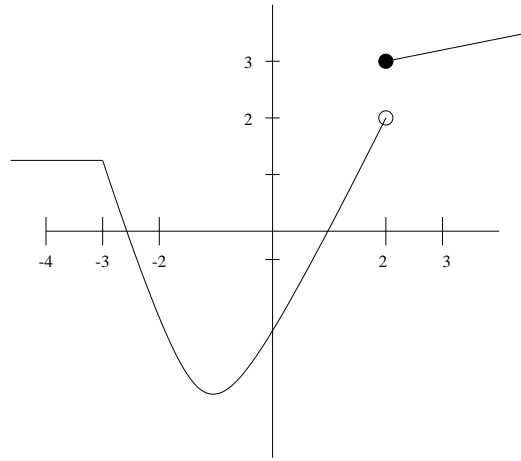(b) $\lim_{x \to 2^-} f(x) =$

(c) $\lim_{x \to 2} f(x) =$

(d) At what points between -4 and 3 (if any) is $f(x)$ *not* continuous?

(e) At what points between -4 and 3 (if any) is $f(x)$ *not* differentiable?

(f) Bonus question (1 extra point): For how many values of x between -2 and 2 is
$$f'(x) = 0?$$

1. Consider the function $f(x)$ whose graph is indicated below

(a) $\lim_{x \to 2^+} f(x) = 3$

(b) $\lim_{x \to 2^-} f(x) = 2$

(c) $\lim_{x \to 2} f(x) = \text{DNE}$

(d) At what points between -4 and 3 (if any) is $f(x)$ *not* continuous? Answer: $x = 2$

(e) At what points between -4 and 3 (if any) is $f(x)$ *not* differentiable? Answer: $x = -3, 2$

(f) Bonus question (1 extra point): For how many values of x between -2 and 2 is
$$f'(x) = 0?$$
Answer: only 1 (approximately at $x = -1$)