

1. True or false: When $\lim_{x \rightarrow a} f(x)$ exists, it equals $f(a)$.

2. Given the graph on the board (*hey, he's drawing it on the board, look at that!*), evaluate:

(a) $f(1)$ (b) $\lim_{x \rightarrow 1} f(x)$ (c) $f(0)$ (d) $\lim_{x \rightarrow 0} f(x)$ e. $f(-1)$ f. $\lim_{x \rightarrow -1} f(x)$

3. Write a function $f(x)$ satisfying ALL of the following:

- i. $f(0) = 1$
 - ii. $\lim_{x \rightarrow 0} f(x) = 0$
 - iii. $\lim_{x \rightarrow 1} f(x) = -1$
 - iv. $f(1) = 0$
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4. Recall the *floor function* $\lfloor x \rfloor$ is the greatest integer less than or equal to x . For example, $\lfloor 2.5 \rfloor = 2$, $\lfloor 10 \rfloor = 10$, $\lfloor -1.8 \rfloor = -2$.

- (a) Graph $y = \lfloor x \rfloor$ for $-4 \leq x \leq 4$
- (b) Evaluate $\lim_{x \rightarrow 1.5} f(x)$
- (c) Evaluate $\lim_{x \rightarrow -1.5} f(x)$
- (d) Evaluate $\lim_{x \rightarrow 0} f(x)$