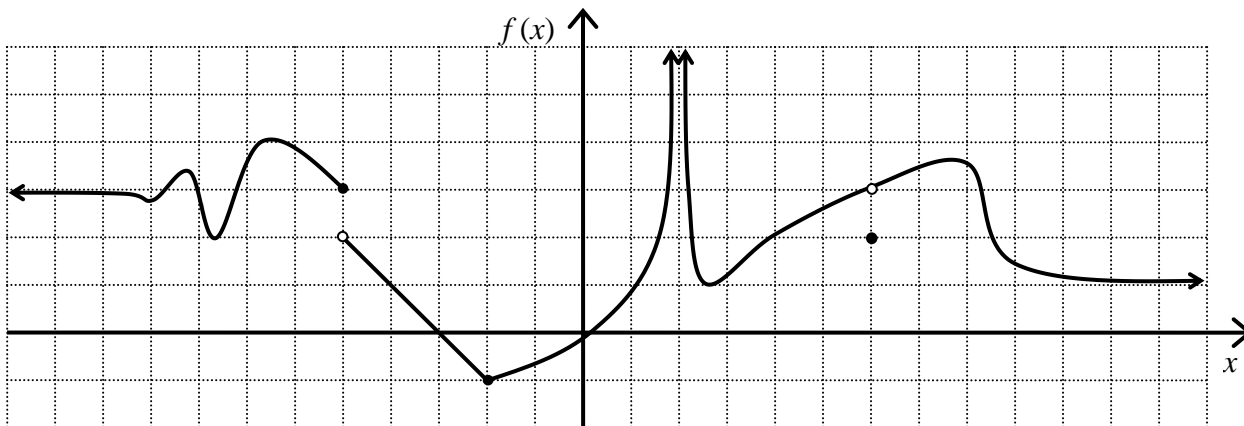


Class Drill 3: Limits and Continuity

Use the graph below to answer the questions that follow.



(1) For each asymptote, give the line equation and say whether it is horizontal or vertical.

(2) $\lim_{x \rightarrow -\infty} f(x) =$

(3) $\lim_{x \rightarrow -5} f(x) =$

(4) $\lim_{x \rightarrow -2} f(x) =$

(5) $\lim_{x \rightarrow 2} f(x) =$

(6) $\lim_{x \rightarrow 6} f(x) =$

(7) $\lim_{x \rightarrow \infty} f(x) =$

(8) Is f continuous at $a = -5$? If not, explain why not.

(9) Is f continuous at $a = -2$? If not, explain why not.

(10) Is f continuous at $a = 2$? If not, explain why not.

(11) Is f continuous at $a = 6$? If not, explain why not.

Remember that for a function f to be continuous at some number “ a ”, the function must pass these three tests:

Test 1: $\lim_{x \rightarrow a} f(x)$ must exist

Test 1a: $\lim_{x \rightarrow a^-} f(x)$ must exist

Test 1b: $\lim_{x \rightarrow a^+} f(x)$ must exist

Test 1c: The numbers in test 1a and 1b must agree.

Test 2: $f(a)$ must exist

Test 3: The numbers in test 1 and test 2 must agree.