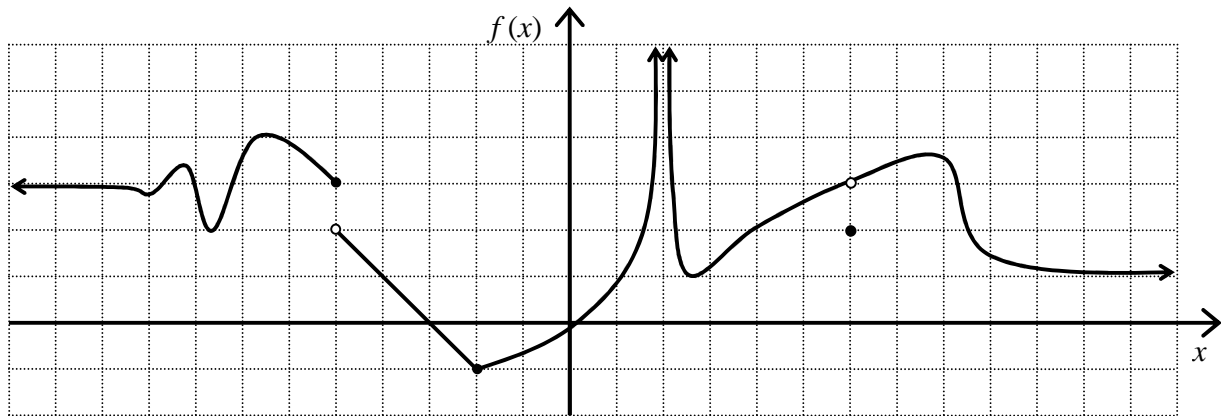


Math 163A Class Drill 2: Limits and Continuity

Use the graph below to answer the questions that follow.



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

(b) Find $\lim_{x \rightarrow 6} f(x)$.

(c) Find $\lim_{x \rightarrow 2} f(x)$.

(d) Find $\lim_{x \rightarrow \infty} f(x)$.

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

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

(g) 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.