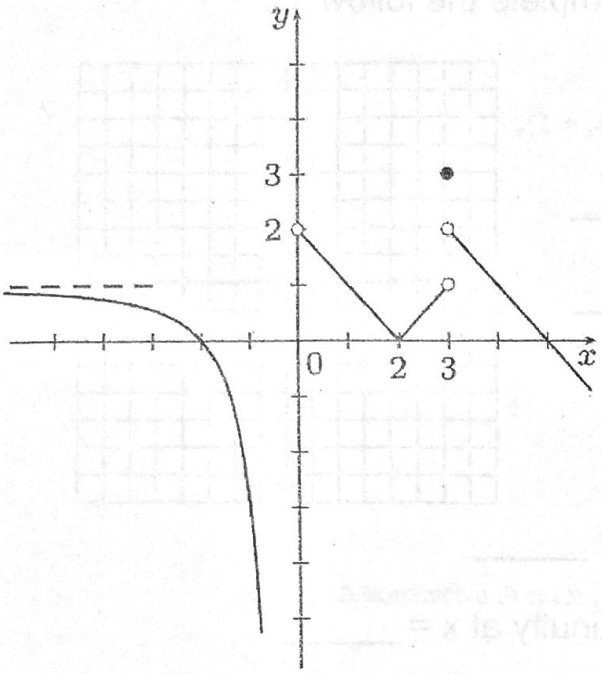
# LIMITS FROM A GRAPH

Name_____

Class_____ Date _____

Use the graphs of the functions below to answer each question. You may use ∞ or - ∞ along with DNE, to answer questions.



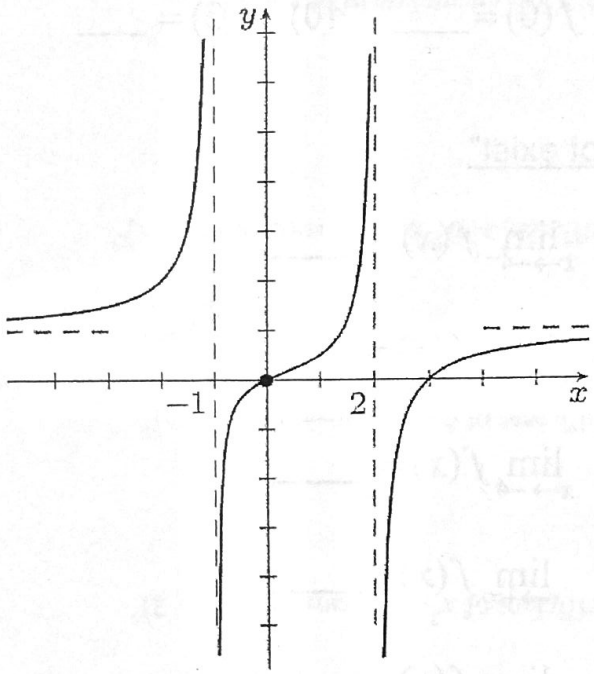

(1) $\lim_{x \to 0^-} f(x) =$ _____

(2) $\lim_{x \to 0} f(x) =$ _____

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

(4) $\lim_{x \to 3} f(x) =$ _____

(5) $\lim_{x \to -\infty} f(x) =$ _____




(6) $\lim_{x \to -1} f(x) =$ _____

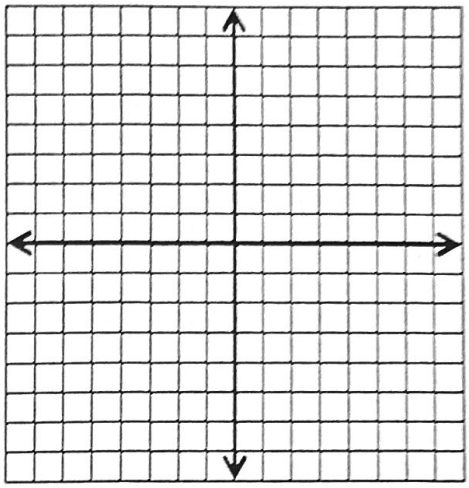
(7) $\lim_{x \to 0} f(x) =$ _____

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

(9) $\lim_{x \to \infty} f(x) =$ _____

# Graphing, Continuity, and Limits for Rational Functions

Sketch the function $f(x)=\dfrac{x^2-x-6}{x^2+x-12}$ and complete the following:



$f(x)$ has a 1) vertical asymptote at x = _____

2) horizontal asymptote of y = ____

3) x – intercept of ____

4) y – intercept of ____

5) removable discontinuity at x = _____

and a 6) non-removable discontinuity at x = _____

Evaluate the following:

7) $f(-4)=$_____ 8) $f(-2)=$_____ 9) $f(0)=$_____ 10) $f(3)=$_____

Evaluate the following limits or state "does not exist"

11) $\lim\limits_{x\to -2} f(x)=$_____

12) $\lim\limits_{x\to 0} f(x)=$_____

13) $\lim\limits_{x\to 3^-} f(x)=$_____

14) $\lim\limits_{x\to 3^+} f(x)=$_____

15) $\lim\limits_{x\to 3} f(x)=$_____

16) $\lim\limits_{x\to -4^-} f(x)=$_____

17) $\lim\limits_{x\to -4^+} f(x)=$_____

18) $\lim\limits_{x\to -4} f(x)=$_____

19) $\lim\limits_{x\to +\infty} f(x)=$_____

20) $\lim\limits_{x\to -\infty} f(x)=$_____

(Form A)