

Written Assignment 3 –
Sections 4.1, 4.2, 4.7

Name: _____

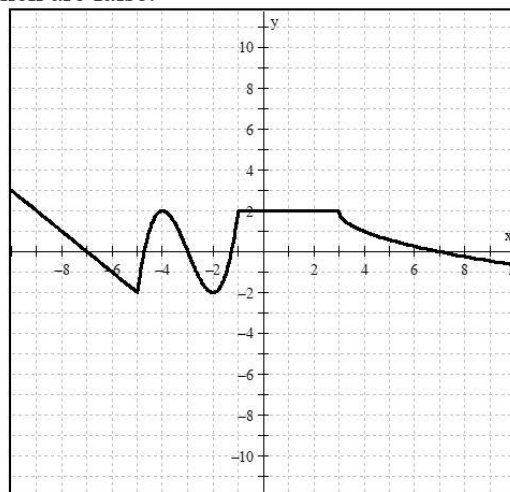
Date: _____

Section: _____

Find all extrema for f on the given interval.

$$f(x) = \frac{x^2}{x^2 + 3}, \quad x \in [-1, 3]$$

Given $f(x)$ defined for $x \in (-\infty, \infty)$, determine which of the following are true statements and which are false.



- | | |
|--|--------------------------|
| a. $\lim_{x \rightarrow -5} f(x) = -5$ | f. $f'(-3) = 0$ |
| b. $f'(-5)$ is undefined | g. $f'(-2)$ is undefined |
| c. $f(-4) = 0$ | h. $f(-1) = 2$ |
| d. $f'(-4) = 0$ | i. $f'(-1) = 0$ |
| e. $f(-3) = 0$ | j. $f'(3) = 0$ |

Differentiate the following. Simplify your answer completely. Write your answer without negative exponents or rational exponents.

$$f(x) = x^2 \ln(3x - 1)$$