Quiz 4.2 – Horizontal and Vertical Asymptotes

1. (1 point) —alfredLibrary/AUCI/chapter4/lesson2/quiz/question1.pg—

Find the horizontal asymptotes of each function, if any, by setting up and evaluating limits at infinity and negative infinity. Enter the word 'none' if the function has no horizontal asymptotes. Complete this problem on paper first so you can practice writing limit notation.

(HINT: You only need to consider the terms with the highest powers in the numerator and denominator.)

(a) $f(x) = \frac{-6x^2+5x-9}{-3x^2-8x-1}$

Horizontal Asymptote(s) at $y =$ ___

(b) $f(x) = \frac{-6x+5x-9}{-3x^2-8x-1}$

Horizontal Asymptote(s) at $y =$ ___

(c) $f(x) = \frac{-6x^6+5x-9}{-3x^2-8x-1}$

Horizontal Asymptote(s) at $y =$ ___

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2. (1 point) —alfredLibrary/AUCI/chapter4/lesson2/quiz/question2.pg–

Analyze the behavior of the function $y = \frac{7x+35}{x^2-7x+12}$ near the vertical asymptote $x = 4$ by analyzing the signs on either side of the asymptote. Enter 'inf' if the limit is ∞, enter '-inf' if the limit is $-\infty$, and enter 'dne' if the limit does not exist.

(a) $\lim\limits_{x \to 4^-} \frac{7x+35}{x^2-7x+12} =$ _____

(b) $\lim\limits_{x \to 4^+} \frac{7x+35}{x^2-7x+12} =$ _____

(c) $\lim\limits_{x \to 4} \frac{7x+35}{x^2-7x+12} =$ _____