SECTION I **Short-Answer Questions:** in Questions 1-6 give a short explanation of your answer along with the answer itself.

1. **(2 marks)** Find the horizontal asymptotes of the function

$$f(x) = \frac{3x+7}{x^2-x-6}.$$

Explain your answer.

As $x \to -\infty$ or $x \to +\infty$,

$$f(x) = \frac{3x+7}{x^2-x-6} \sim \frac{3x}{x^2} \to 0.$$