

**Quiz 6 (25-04-2018)**  
PREPARED BY DR. KAREEM ELGINDY

MATH-101, CALCULUS I

**Student Name:** ..... **Student ID:** .....  
**Section #:** .....

**Question 1. [4 marks]** Calculate the following limits:

(a) [2 marks]  $\lim_{x \rightarrow \infty} (\sinh x - e^x)$ .

(b) [2 marks]  $\lim_{x \rightarrow -\infty} (\ln |x|)^{1/x}$ .

**Question 2.** [4 marks]

(a) [2 marks] Sketch the graph of  $f(x) = \sin(x) - \sqrt{3}\cos(x)$ . Show your steps clearly.

(b) [2 marks] Find the slant asymptotes to the graph of  $f(x) = \sqrt{x^2 + 4x}$ .