Math 101-03 **Quiz#1** **Term: 173** **July 5, 2018**

1. Use of cell phones is NOT allowed.
2. Answers without supporting work will NOT be given credit.
3. You have **15 minutes** to complete this quiz.

Name:

Serial:

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1. Let

$$f(x) = \frac{x-1}{\sqrt{x^2+3}-2}$$

   (a) Find $\lim_{x\to 1} f(x)$

   (b) Find all points where $f(x)$ is **discontinuous**, and determine the type of discontinuity.

   (c) Consider the function $g(x)$ on the interval $[0, \infty)$ defined as

$$g(x) = \begin{cases} \dfrac{x-1}{\sqrt{x^2+3}-2}, & \text{if } x \neq 1 \\ a, & \text{if } x = 1 \end{cases}$$

   Determine the value of a to make $g(x)$ continuous at $x = 1$.

2. Given that $\lim_{x\to 2}(5x-7)=3$. Find a number δ such that

$$\text{if } |x-2|<\delta \text{ then } |f(x)-3|<0.1$$

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The End.