MATH 133 – Calculus with Fundamentals 1
Quiz 3 – September 29, 2017

Your Name: _____

*Directions*

Do all work on this sheet. There are 30 possible points.

1) (a) (10) Evaluate the function $f(x) = \frac{x^2-9}{x+3}$ at the indicated $x$'s.

| $x$ | $-3.5$ | $-3.1$ | $-3.01$ | $-2.99$ | $-2.9$ | $-2.5$ |
|---|---|---|---|---|---|---|
| $\dfrac{x^2-9}{x+3}$ | | | | | | |

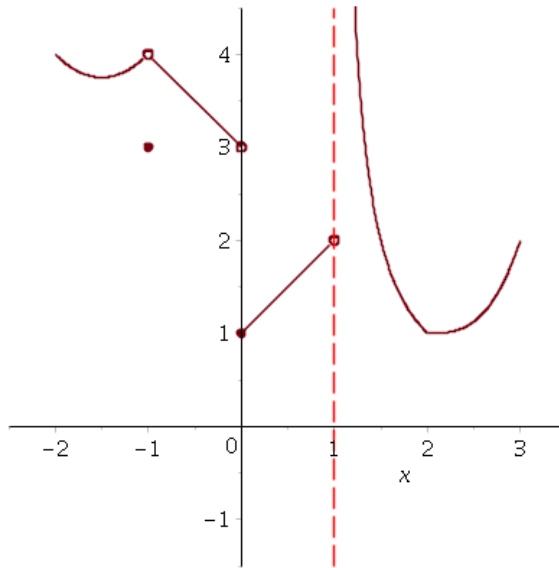(b) (5) Use those values to estimate $\displaystyle\lim_{x\to-3}\frac{x^2-9}{x+3}$.

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Figure 1: The Graph $y = f(x)$

2) By examining the graph determine the indicated values and answer the questions.

  (a) (3) $\lim\limits_{x \to -1^-} f(x) = $ _____

  (b) (3) $\lim\limits_{x \to -1^+} f(x) = $ _____

  (c) (3) $\lim\limits_{x \to 0^-} f(x) = $ _____

  (d) (3) $\lim\limits_{x \to 0^+} f(x) = $ _____

  (e) (3) Does $\lim\limits_{x \to 0} f(x)$ exist? _____ (Yes/No) Explain: