Alex Thies
Math 397
Homework #1

(1) The *quick brown* **fox** jumps over the *lazy* **dog**.

(2) *Italicized text*

(3) **Bold-face text**

(4) Some normal text, *some italicized text*, and some **bold-face text**.

(5) In LaTeX, all math must be inside dollar signs. Notice the difference between "Let b be an element of $\mathbb{R}$" and "Let b be an element of $\mathbb{R}$".

(6) $\displaystyle\int_0^1 x^7\,dx = \frac{x^8}{8}\Big]_0^1 = \frac{1}{8} - \frac{0}{8} = \frac{1}{8}.$

(7) $f'(\mu) = \lim_{h\to 0}\left[\frac{f(\mu+h)-f(\mu)}{h}\right]$ and $\lim\limits_{x\to 5}\frac{\cos x}{x} = 0.$

(8) Let $F : \mathbb{R} \to \mathbb{R}$ be given by $f(x) = x^3 + 3x^2 - 1$.

(9) $5 < 6$ and $6 > 2$

(10) For every $x \in (0, 1)$ it is true that $x^2 < x$.

(11) $(f \circ g)(x) = (f(g(x))$ and $A \cap B \subseteq A$ and $X \neq Y$.

Write your paragraph in below:

As with the previous reading, overall I enjoyed *An Application of Geography to Mathematics*. I found that the authors did a good job introducing the historical context for an integral that seems arbitrarily difficulty to the elementary student of calculus; in so doing, they weaved together a discussion about solid geometry and integral calculus that is often absent from good introductory textbooks about either subject. Absent from this piece is a description of the options available to Mercator, and the real-world consequences of the eventual wide-spread use of his map, which I think would have made for a better overall piece of writing.[1]

[1]Fortunately, such a description can be found in Episode 16 of Season 2 of *The West Wing*.