MAT 370 Fall 2017
Quiz 2 NAME:_____

Show all work clearly and in order. Justify your answers.

(1) Suppose X is a conitnuous random variable with density function

$$f(x) = \begin{cases} 0 & x < -1 \\ \frac{x^2}{3} & -1 \leq x \leq A \\ 0 & x > A \end{cases}$$

(a) Find A which makes this a true probability density function.

(b) Find $P(X < 1 | X > 0)$.

(c) Find the probability that the following function of X (the random variable from part (a)) is increasing:

$$g(X) = X^4$$