

Name: _____

1. (10 points) Suppose that a random variable, X , has the following probability density function:

$$f(x) = \begin{cases} C(1 - x^2) & \text{if } -1 < x < 1 \\ 0 & \text{otherwise} \end{cases}$$

(a) What is the value of C ?

(b) Find $P(X > 0)$

(c) Find $E(X)$

(d) Find $Var(X)$