

Math 477, Lecture 12 class work

Name: _____

Net ID: _____

1. Suppose X is a continuous random variable with probability density function f_X . If $Y = X^2$, find the probability density function f_Y of Y in terms of f_X .

2. Suppose $X_i, i = 1, \dots, n$ are uniformly distributed continuous random variables on $[0, 1]$. Find the probability density function for $Y = X_1 + \dots + X_n$.

3. Let X be a continuous random variable with density function $f(x) = \begin{cases} \frac{c}{x^2}, & 1 \leq x \leq 2 \\ 0 & \text{else} \end{cases}$.

Find $c, E[X], Var(X)$.