1. Suppose that $X$ is a continuous uniform random variable, with a constant probability density function on $[-3,3]$. What is the CDF of $X$?

2. Suppose $X$ has density $f_X(x) = 1/5$ for $0 < x < 5$, and $f_X(x) = 0$ otherwise. Suppose that $Y$ has density $f_Y(y) = 2e^{-2y}$ for $y > 0$, and $f_Y(y) = 0$ otherwise. Also suppose that $X$ and $Y$ are independent. Find $P(Y > X)$.

3. Consider three independent random variables $X$, $Y$, $Z$ that are each uniformly distributed on the interval $[0, 20]$. Let $V$ denote the minimum of these three random variables. Find the expected value of $V$.

4. Suppose that the pair of random variables $X$, $Y$ has a constant joint probability density function on the triangle with vertices at $(-5,0)$, $(5,0)$, $(0,5)$. Find the expected value of $Y$. 