You have the following joint PMF of random variables $X$ and $Y$:

1. (Lecture 12) Find the marginal PMFs of $X$ and $Y$, $p_X(x)$ and $p_Y(y)$.

2. (Lecture 11) Find the expectation and variance of $X$ and $Y$, $E[X]$ and $E[Y]$, and $\text{var}(X)$ and $\text{var}(Y)$.

3. (Lecture 13) Find the conditional PMFs $p_{X|Y}(x|3)$ and $p_{Y|X}(y|3)$ and compute $E[Z]$, where $Z = 2X + 3Y + 10$. 