Two Random Variables with Uniform Distribution Tutorial Exercise

Let two random variables X, Y having joint uniform distribution in area defined by $x_1 < x \leq x_2$ and $y_1 < y \leq y_2$. a) Find the probability of the event $\{x_3 < X \leq x_4, y_3 < Y \leq y_4\}$, when $x_3, x_4 \in (x_1, x_2)$ and $y_3, y_4 \in (y_1, y_2)$. b) Find the probability of the event $\{X > x_3\}$, when $x_3 \in (x_1, x_2)$.