

1) Complete the statement in three different ways, in one, referring to the *pdfs* of X and Y , in the next to the *cdfs* and in the third referring to the probabilities that X and Y are in specified sets:

Random variables X and Y are independent, if and only if :

i) _____

ii) _____

iii) _____

2) Show that if X and Y are independent, then so are $U = g(X)$ and $V = h(Y)$.