I'll work out the first one and leave the other two to you. First, find Pr(*X*≤*x*). We have

Pr(*X*≤*x*)=1−Pr(*X*>*x*)=1−Pr(*U*>*x*,*V*>*x*)=1−Pr(*U*>*x*)Pr(*V*>*x*)=1−(1−*x*)2

The first step follows that, for *x* to be a minimum *U* and *V* must be greater than that value. Independence gives us the second line. Use of the CDF of the uniform gives us the third.

To get the density, take the derivative to get 2(1−*x*).