

Name: \_\_\_\_\_

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1. Two people are meeting for lunch. If the first person arrives at a time  $X$ , represented by a random variable uniformly distributed in the time range of 12:15 to 12:45, and the second person arrives at a time  $Y$ , represented by a random variable uniformly distributed in the time range 12:00 - 1, what is the probability that neither waits longer than 5 minutes for the other to arrive?

2. Suppose that  $X$  &  $Y$  have joint density function  $f(x,y) = x^{-2}y^{-2}$ ,  $x,y \in (1,\infty)$ . Find the marginal density for  $f_X(x)$