Student Information

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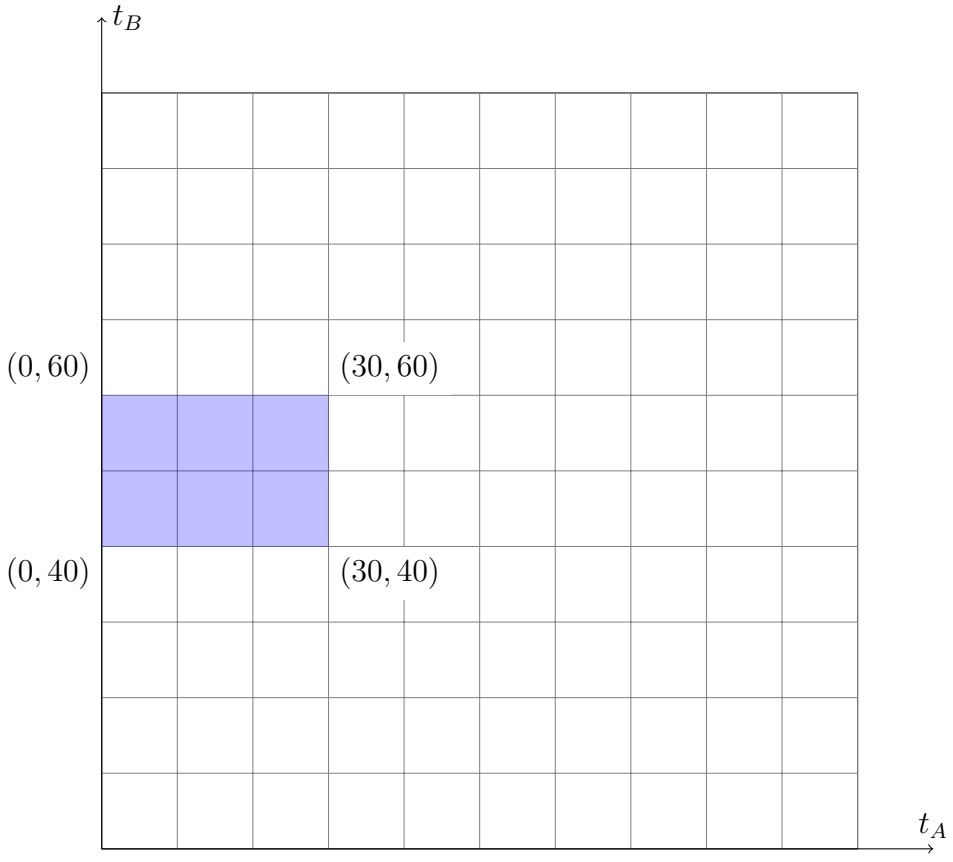
Answer 1

a)

- Since both T_A and T_B are uniformly distributed, their probability density functions are $f_A = f_B = \frac{1}{100}$ with $b = 100$ and $a = 0$. Since they are independent, the joint density function is $f(t_A, t_B) = f_A \cdot f_B = \frac{1}{10{,}000}$.
- The joint cumulative distribution function is $F(t_A, t_B) = \iint \frac{dx \cdot dy}{10{,}000} = \int \frac{x \cdot dy}{10{,}000} = \frac{x \cdot y}{10{,}000}$.

b)

Let's draw a 100×100 square to illustrate the probabilites. Since the probability density function is a constant function, the simple area of a region over ten thousand would give us the probability of an event being inside the region.



c)

d)

Answer 2

a)

b)

Answer 3

Answer 4

a)

b)

c)