Calculating the probability that X happens before Y

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- The video concerns how to calculate the probability that $P(X < T)$. What types of random variable must X and Y be in order for the derivation in the video to hold.

- What is the cumulative probability distribution function and what is the probability density function for the type of random variable you mentioned in your answer to the first question.

- Explain in your own words why the answer to this question is an integral and explain what the integrand of this integral represents.

- Set a question like the one discussed in the question that asks for the probability that one random variable is less than another.