**Exponential Distribution** - It is particularly useful for modeling scenarios where events occur independently and at a constant average rate.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Normal Distribution** - It is characterized by its bell-shaped curve, defined by two parameters: the mean (𝜇μ) and the standard deviation (𝜎σ).

**EXAMPLE PROBLEM AND SOLUTION:**

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**Poisson Distribution** - It is commonly used in scenarios where events happen randomly and independently.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Binomial Distribution** - It is particularly useful in modeling scenarios where there are two possible outcomes (success or failure) for each trial.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Triangular Distribution** - This distribution is often used in scenarios where you want to model uncertain quantities with limited information, especially when only the minimum, maximum, and most likely values are known.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Lognormal Distribution** - The lognormal distribution is used to model data that are positively skewed, such as income, stock prices, and certain biological measurements.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Gamma Distribution** - The gamma distribution is particularly useful in scenarios involving queuing models, reliability analysis, and Bayesian statistics.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Beta Distribution** - This distribution is particularly useful for modeling random variables that represent proportions or probabilities.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Weibull Distribution** - It is particularly versatile and can model various types of failure rates, making it widely applicable in engineering and survival studies.

**EXAMPLE PROBLEM AND SOLUTION:**

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**Uniform Distribution** - This distribution is often used to model situations where there is no prior knowledge about which outcomes are more likely than others.

**EXAMPLE PROBLEM AND SOLUTION:**

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