

- **Nature of Cash Flows:**

- **Discrete Time:** Uses $\frac{FV}{(1+r)^t}$ for a single, lump-sum future payment or a series of discrete payments at specific time points.
- **Continuous Time with $\exp(-rt)$:** Used for discounting a single, lump-sum future payment or a series of discrete payments at specific time points.
- **Continuous Time with $\frac{1}{r}(1 - \exp(-rt))$:** Used for discounting a continuous payment stream, like a continuously paid annuity.

- **Formula Interpretation:**

- **Discrete Time:** $\frac{FV}{(1+r)^t}$ directly gives the present value of a future cash flow at discrete time intervals.
- **Continuous Time with $\exp(-rt)$:** Directly gives the present value of a future cash flow. It's straightforward and simple for single cash flows at discrete times.
- **Continuous Time with $\frac{1}{r}(1 - \exp(-rt))$:** Gives the present value of the entire continuous cash flow from time 0 to t . It's more complex and not directly applicable for discrete time points or single cash flows.

- **Simplicity and Conventional Use:**

- **Discrete Time:** $\frac{FV}{(1+r)^t}$ is widely accepted and used for its simplicity and direct interpretation for discounting future values at discrete

intervals.

- **Continuous Time with $\exp(-rt)$:** Widely accepted and used due to its simplicity and direct interpretation for discounting future values.
- **Continuous Time with $\frac{1}{r}(1 - \exp(-rt))$:** More specialized and less commonly applied outside its intended context of continuous cash flows due to its complexity for single or discrete cash flows.