Introduction to Finance

*When using these formulas, *r* represents interest/market/discount rate as a decimal.
When entering it into a financial calculator as I/Y, it is a percent (equal to the decimal value * 100).

Time Value of Money

$$PV = \frac{C}{(1+r)^n}$$

$$FV = C * (1+r)^n$$

Used to bring a value back in time
*When using a financial calculator, *C* is represented by FV

Used to bring a value forward in time
*When using a financial calculator, *C* is represented by PV

Annuities
(regular payments for *n* Terms)

Ordinary

$$PV = \frac{C}{r} * (1 - \frac{1}{(1+r)^n})$$

$$FV = C * \frac{(1+r)^n - 1}{r}$$

*When using a financial calculator, *C* is represented by PMT

Growing

$$PV = \frac{C}{r-g} * (1 - \frac{(1+g)^n}{(1+r)^n})$$

$$FV = C * \frac{(1+r)^n - (1+g)^n}{r-g}$$

C represents payments, but do not solve using financial calculator functions

Perpetuity
(regular payments forever, no *n*)

Ordinary

$$PV = \frac{C}{r}$$

C represents payments, but do not solve using financial calculator functions

Growing

$$PV = \frac{C}{r-g}$$

C represents payments, but do not solve using financial calculator functions