Present Value Formula

Period:

Commonly a period will be a year but it can be any time interval you want as long as all inputs are consistent.

Number of Periods (t):

Number of periods or years

Perpetuity:

For a perpetual annuity t approaches infinity. Enter p, P, perpetuity or Perpetuity for t

Interest Rate (R):

Is the annual nominal interest rate or "stated rate" per period in percent. r = R/100, the interest rate in decimal

Compounding (m):

Is the number of times compounding occurs per period. If a period is a year then annually=1, quarterly=4, monthly=12, daily = 365, etc.

Continuous Compounding:

Is when the frequency of compounding (m) is increased up to infinity. Enter c, C, continuous or Continuous for m.

Payment Amount (PMT):

The amount of the annuity payment each period

Growth Rate (G):

If this is a growing annuity, enter the growth rate per period of payments in percentage here. g = G/100

Payments per Period (Payment Frequency (q)):

How often will payments be made during each period? If a period is a year then annually=1, quarterly=4, monthly=12, daily = 365, etc.

Payments at Period (Type):

Choose if payments occur at the ***end of each payment period (ordinary annuity, in arrears, 0)*** or if payments occur at the ***beginning of each payment period (annuity due, in advance, 1)***

Present Value (PV):

The present value of any future value lump sum and future cash flows (payments)

Present Value of a Growing Annuity (g ≠ i)

where g = G/100

$$PV = \frac{PMT}{(i-g)}\left[1-\left(\frac{1+g}{1+i}\right)^{n}\right](1+iT)$$