Only one formula to memorize !

Growing Annuity formula encompasses all of the other formulas in this section:

$$PV(Growing\ Annuity) = \frac{C}{r-g} * \left[1 - \left(\frac{1+g}{1+r}\right)^N\right]$$

Type of cash-flows	Constant cash-flows	Growing cash-flows
Perpetuities (last forever)	$g = 0 ; n \to \infty$ $PV(Perpetuity) = \frac{C}{r}$	$g < r ; n \to \infty$ $PV(Growing\ Perpetuity) = \frac{C}{r-g}$
Annuities (N periods)	$g = 0 ; n \to N$ $PV(Annuity) = \frac{C}{r} * \left[1 - \frac{1}{(1+r)^N}\right]$	$g < r ; n \to N$ $PV(Growing\ Annuity) = \frac{C}{r-g} * \left[1 - \left(\frac{1+g}{1+r}\right)^N\right]$

Solving for Variables Other Than Present Values or Future Values

First step: what is the **missing value**?

PV	*Present Value*
FV	*Future Value*
C	*Cash Flow (Payment)*
r	*Internal Rate of return*
N	*N periods*

Second step: **Timeline**

Third step: what **kind of stream of cash flows** (Annuity, Perpetuity, etc.)?

Fourth step: what is the **appropriate formula** ?

Growing Annuity formula encompasses all of the other formulas in this section:

$$PV(Growing\ Annuity) = \frac{C}{r-g} * \left[1 - \left(\frac{1+g}{1+r}\right)^N\right]$$