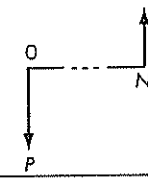
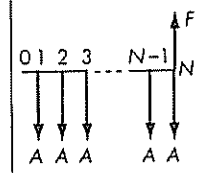
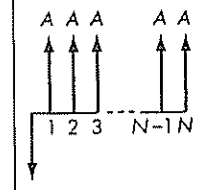
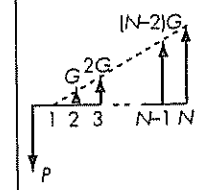
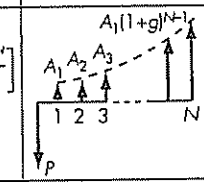
Summary of Discrete Compounding Formulas with Discrete Payments

Flow Type	Factor Notation	Formula	Cash Flow Diagram	Factor Relationship
SINGLE	Compound amount $(F/P, i, N)$	$F = P(1 + i)^N$		$(F/P,i,N) = i(F/A,i,N) + 1$
	Present worth $(P/F, i, N)$	$P = F(1 + i)^{-N}$		$(P/F,i,N) = 1 - (P/A,i,N)i$
EQUAL PAYMENT SERIES	Compound amount $(F/A,i,N)$	$F = A\left[\frac{(1 + i)^N - 1}{i}\right]$		$(A/F,i,N) = (A/P,i,N) - i$
	Sinking fund $(A/F,i,N)$	$A = F\left[\frac{i}{(1 + i)^N - 1}\right]$		
	Present worth $(P/A,i,N)$	$P = A\left[\frac{(1 + i)^N - 1}{i(1 + i)^N}\right]$		$(A/P, i, N) = \frac{i}{1 - (P/F,i,N)}$
	Capital recovery $(A/P,i,N)$	$A = P\left[\frac{i(1 + i)^N}{(1 + i)^N - 1}\right]$		
GRADIENT SERIES	Linear gradient Present worth $(P/G,i,N)$	$P = G\left[\frac{(1 + i)^N - iN - 1}{i^2(1 + i)^N}\right]$		$(F/G,i,N) = (P/G,i,N)(F/P,i,N)$ $(A/G,i,N) = (P/G,i,N)(A/P,i,N)$
	Geometric gradient Present worth $(P/A_1,g,i,N)$	$P = \left[A_1\left[\frac{1 - (1 + g)^N(1 + i)^{-N}}{i - g}\right]\right.$ $\left.\frac{NA_1}{1 + i} \quad (\text{if } i = g)\right.$		$(F/A_1,g,i,N) = (P/A_1,g,i,N)(F/P,i,N)$