Finance Formulas

Simple Interest Formulas (for add-on interest)	
$FV = P(1 + rt)$ $Interest\ Earned = FV - P$ $Interest\ Paid = total\ paid - P$	FV = future value or maturity value P = present value or principal (lump sum) r = annual interest rate in decimal form t = time in years

Compound Interest Formulas	
$FV = P\left(1 + \frac{r}{n}\right)^{nt}$ $Interest\ Earned = FV - P$	n = number of periods in one year

Annual Yield Formulas	
$ay = \left(1 + \frac{r}{n}\right)^{nt} - 1$	Annual Yield for 1 year ay = annual yield

Ordinary Annuity Formulas (for sinking funds, IRA, TDA)	
$\text{FV(ordinary)} = \text{pymt}\dfrac{\left(1 + \frac{r}{n}\right)^{nt} - 1}{\left(\frac{r}{n}\right)}$ $Interest\ Earned = FV - (pymt * nt)$	pymt = payment size
$\text{pymt}\dfrac{\left(1 + \frac{r}{n}\right)^{nt} - 1}{\left(\frac{r}{n}\right)} = P\left(1 + \frac{r}{n}\right)^{nt}$	P = present value of the annity

Simple Interest Amortized Loan Formulas (for mortgage loans)	
$\text{pymt}\dfrac{\left(1 + \frac{r}{n}\right)^{nt} - 1}{\left(\frac{r}{n}\right)} = P\left(1 + \frac{r}{n}\right)^{nt}$ $Interest\ Paid = (pymt * nt) - P$	P = present value or loan amount