UNIT	NAME OF FORMULA	FORMULA	VARIABLES
4C	Savings Plan (regular payments)	$A = PMT \times \dfrac{\left(\left(1+\dfrac{APR}{n}\right)^{(nY)} - 1\right)}{\left(\dfrac{APR}{n}\right)}$	A = Accumulated savings plan balance PMT = regular payment (deposit) amount APR = annual percentage rate (decimal) n = number of payments/ year Y = number of years
4C	Savings Plan solved for Payments	$PMT = \dfrac{A \times \left(\dfrac{APR}{n}\right)}{\left(\left(1+\dfrac{APR}{n}\right)^{(nY)} - 1\right)}$	A = Accumulated savings plan balance PMT = regular payment (deposit) amount APR = annual percentage rate (decimal) n = number of payments/ year Y = number of years
4C	Total and Annual Return	Total return = $\dfrac{(A-P)}{P}$ Annual return = $\left(\dfrac{A}{P}\right)^{(1/Y)} - 1$	A = Accumulated balance P = Original principal Y = Number of years
4D	Loan Payment (Installment Loan)	$PMT = \dfrac{P \times \left(\dfrac{APR}{n}\right)}{\left(1 - \left(1+\dfrac{APR}{n}\right)^{(-nY)}\right)}$	P = starting loan principal (amt. Borrowed) PMT = regular payment amount APR = annual percentage rate (decimal) n = number of compounding periods/ year Y = number of years
4D	Loan Payment-Solved for Principal (Installment Loan)	$P = \dfrac{PMT \times \left(1 - \left(1+\dfrac{APR}{n}\right)^{(-nY)}\right)}{\left(\dfrac{APR}{n}\right)}$	P = starting loan principal (amt. Borrowed) PMT = regular payment amount APR = annual percentage rate (decimal) n = number of compounding periods/ year Y = number of years

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UNIT	NAME OF FORMULA	FORMULA	VARIABLES
4B	Simple Interest	$I = p \times r \times t$	I = Interest earned p = starting principal r = annual percentage rate (as a decimal) t = time (in years)
4B	Accumulated Balance for Interest Compounded once a Year	$A = P(1 + APR)^Y$	P = starting principal APR = annual percentage rate (as a decimal) Y = number of years A = accumulated balance after Y years
4B	Accumulated Balance for Interest Compounded *n* Times per Year	$A = P\left(1 + \frac{APR}{n}\right)^{(nY)}$	P = starting principal APR = annual percentage rate (decimal) n = number of compounding periods/ year Y = number of years A = accumulated balance after Y years
4B	Accumulated Balance for Continuous Compounding	$A = P \times e^{(\mathrm{APR} \times Y)}$	P = starting principal APR = annual percentage rate (decimal) Y = number of years A = accumulated balance after Y years
4B	Annual Percentage Yield over one year (*n* compoundings per year)	$APY = \left(1 + \frac{APR}{n}\right)^n - 1$	APR = annual percentage rate (decimal) n = number of compounding periods/ year APY = annual percentage yield
4B	Annual Percentage Yield over one year (continuous compounding)	$APY = e^{APR} - 1$	APR = annual percentage rate (decimal) APY = annual percentage yield
4B	Calculate Starting Principal for a Desired Result (*n* compoundings per year)	$P = \frac{A}{\left(1 + \frac{APR}{n}\right)^{(nY)}}$	A = accumulated balance P = starting principal APR = annual percentage rate (decimal) Y = number of years n = number of compounding periods/year
4B	Calculate Starting Principal for a Desired Result (continuous compounding)	$P = \frac{A}{e^{(\mathrm{APR} \times Y)}}$	P = starting principal APR = annual percentage rate (decimal) Y = number of years A = accumulated balance after Y years

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