Brebeuf College — MCR 3U1 Financial Formulas — Mr. Ryan

A	-	Total Amount of Money	**r**	-	Rate of Interest per year or Time Interval
P	-	Principal or Regular Payment	c_y	-	# or Compounds per year
PV	-	Present Value	c_p	-	# or Compounds per payment
n	-	Number of payments	**t**	-	Time in years or in Time Intervals

***Note:** For all Calculations involving Compounding: $R = \left(1 + \frac{r}{c_y}\right)$

Simple Interest

Amount of Simple Interest: $A_I = P\,r\,t$

Principal and Simple Interest: $A = P + P\,r\,t$

Compound Interest

Amount of Compound Interest: $A_I = P\left(R^{t\,c_y} - 1\right)$

Principal and Compound Interest: $A = P\,R^{t\,c_y}$

Present Value: $PV = \frac{A}{R^{t\,c_y}}$

Annuities

Total Amount of an Annuity: $A = \frac{P(R^{n\,c_p} - 1)}{(R^{c_p} - 1)}$

Present Value of an Annuity: $PV = \frac{P(1 - R^{-n\,c_p})}{(R^{c_p} - 1)}$

Mortgage

Mortgage Payment: $\text{Payment} = \frac{A(R^{c_p} - 1)}{(1 - R^{-n\,c_p})}$