

**MAT 155P –PreCalculus Mathematics Plus Common Formulas**  
**(Updated 8/8/17)**

**Compound Interest**

After  $t$  years, the balance,  $A$ , in an account with principal  $P$  and annual interest rate,  $r$ , is given by

1.  $A(t) = P \left( 1 + \frac{r}{n} \right)^{nt}$ , for  $n$  compounding periods per year.
2.  $A(t) = P e^{rt}$ , for continuously compounding interest.

**Change-of-Base Formula for Logarithms**

For any positive real numbers  $M$ ,  $b$ , and  $n$ , where  $n \neq 1$ , and  $b \neq 1$ ,

$$\log_b M = \frac{\log_n M}{\log_n b}$$