

**Formula Sheet:**

**Compound Interest:** If a principal  $P$  is invested at an interest rate  $r$  for a period of  $t$  years, then the amount  $A(t)$  of the investment is given by:

$$A(t) = P \left( 1 + \frac{r}{n} \right)^{nt} \quad (\text{if compounded } n \text{ times per year})$$

$$A(t) = P e^{rt} \quad (\text{if compounded continuously}).$$

**Change of Base Formula:** Let  $a$  and  $b$  be two positive numbers with  $a, b \neq 1$ . If  $x > 0$ , then:

$$\log_b x = \frac{\log_a x}{\log_a b}$$