

Formulas (provided on exam)

Quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Amount A after t years in an account earning interest at rate r with initial amount A_0 :

$$A(t) = A_0 \left(1 + \frac{r}{n}\right)^{nt}, \quad \text{compounded } n \text{ times per year}$$

$$A(t) = A_0 e^{rt}, \quad \text{compounded continuously}$$

Value of an annuity after T years at interest rate r (compounded continuously) and income function $c(t)$:

$$A = e^{rT} \int_0^T c(t) e^{-rt} dt$$

Conversion formulas:

$$\log_b a = \frac{\ln(a)}{\ln(b)} \quad b^c = e^{c \ln(b)}$$