**Continuous Compound Interest:**

\[ A = P \cdot e^{rt} \]

where \( A \) = the amount accumulated at time \( t \),
\( P \) = the principal amount of money,
\( r \) = the annual interest rate (expressed as a decimal),
\( t \) = the time expressed in years.

**Sample problems:**

1. If $3500 is invested at 8.25% compounded continuously for 3 years, how much to the nearest cent will be in the account?

2. If $400 is invested at \( \frac{3}{4} \)% compounded continuously for 6 months, how much to the nearest cent will be in the account?

3. How long will it take an investment of $1200 to grow to $5000, if invested at 7% compounded continuously?

4. Which is the better option to borrow $24,000 to buy a new truck?
   
   A. Bank A which offers \( \frac{7}{4} \)% interest compounded continuously for six years, or
   
   B. Bank B which offers \( \frac{1}{2} \)% interest compounded semiannually for seven years.