

1. Solve the equation for t .

$$5 - e^{\left(\frac{t}{2}-1\right)} = 4$$

2. \$1,000 is invested in an account that earns 5% interest, compounded monthly. Find the value of the account after 8 years if there are no additional deposits or withdrawals.

3. Find the derivative of the function

$$f(x) = \frac{e^{(x^2+1)}}{x}$$