Homework II

1. This is a similar problem to Problem 1 of Homework I. Again put a potato into an oven. The temperature of the potato at is and it will heat up. Denote the temperature at as . But this time the temperature of the oven **is not a constant** but . Likewise, we can write down an equation for the change of potato temperature:

Solve .

Hint: Use the method of integrating factor.

1. Find the general solution of the equation of

Hint: Use the method of integrating factor.

1. Arfken Exercise 7.6.16 (p372)

Hint: Use the method of Wronskian.

1. Arfken Exercise 7.6.19 (p373)
2. Find the general solution of the equation of

using the damp oscillation formula we gave in class.

1. Solve the equation of

And initial conditions: . (After class on Sep. 23)