

LECTURE SUMMARY 10.2

FRIDAY, JULY 15, 2016

HIGHER-ORDER LINEAR NONHOMOGENEOUS DIFFERENTIAL EQUATIONS WITH CONSTANT COEFFICIENTS(CTS.)

1. For initial-value problems, solve the general solutions first, then determine the coefficients by initial-values.

2. If the right hand side of nonhomogeneous equations has different terms, e.g.

$$a_n y^{(n)} + a_{n-1} y^{(n-1)} + \dots + a_1 y' + a_0 y = q_1(x) + q_2(x) + \dots q_k(x)$$

use undetermined coefficients to find particular solutions for each term, then their summation is a particular solution of the original nonhomogeneous differential equation.

3. Examples.

Suggestion: Do exercises as many as possible.