DE (First Midterm—Chapter 2)

Total points: 100 points 2hours to do the work, 沒化到最簡-2

1. Find the general solution, using the method of variation of parameters for a particular solution. (20 points)



Solution:



1. Solve the :





 or 

 +5

1. Solve the :

, 

, 

 +4

 +2







 +2

 +2







 +2





 +2

 +1

1. Find the general solution.
2.  (10 points)
3. (10 points)

Solution:

1. 

 +1

 or  +2

 +2

   +1

 +4

1. +1

R=-1(重根) +2

+2

代回原式 +1

C=1/4 +2

 

+2

1. Find the general solution, using the method of undetermined coefficient for a particular solution. (10 points)

Solution:

+5

++=

+3

+ +2

1. is one solution of the differential equation ,

. (10 points)

Solution:

+5

+5

1. Solve the initial value problem

(10 points)

Solution:

r(r+5)(r-2)=0 r=0，-5，2

+5

代入

得

+5

1. Find the general solution (10 points)

Solution:

()=0 D=1i

+5

+3

y= +2

1. Find the general solution, using the method of variation of parameters for a particular solution. . (10 points)

Solution:

+3

+1

+1

+1

y= +4

1. Find the general solution, using the method of undetermined coefficient for a particular solution. (10 points)

+3

令入

(19A+4B)cost+(-4A+19B)sint=-15cost+23sint

比較係數 A=-1 B=1

y=

代入 +3

y= +4