Advanced Engineering Mathematics, by Erwin Kreyszig 10th. Ed.

**Problem Set 6.3**

No. 1



No. 2





ℒ

另解

ℒ



No. 3





另解

ℒ



No. 4





ℒ

No. 5





ℒ

No. 6









ℒ

No. 7

 





ℒ

No. 8









ℒ

No. 9









ℒ

No. 10







ℒNo. 11







ℒ

No.12

ℒ

ℒ-1

ℒ-1

ℒ-1

No.13

ℒ

ℒ-1

ℒ-1

ℒ-1



No. 14

ℒ

ℒ-1

ℒ-1

ℒ-1

ℒ-1

No.15

ℒ

ℒ-1

ℒ-1

No.16

ℒ









No. 17

ℒ









No. 18



ℒℒ



將 代入









ℒ－1

No. 19



ℒℒ



將 代入













ℒ－1

No. 20



ℒℒ



將 代入



 





ℒ－1

No. 21

 if and 0 if  

ℒℒ





將 代入









ℒ－1













另解

 ℒ

 



































No. 22

 if and 8 if ; 

ℒℒ











將 代入











ℒ－1











另解

 ℒ

 































No. 23

 



























另解

 ℒ

 



























































No. 24

 

ℒℒ 



將 代入



 



ℒ－1









 

另解

 ℒ;

 



























No. 25

 

ℒℒ



將 代入





ℒ－1











另解

 ℒ

 

























No. 26

, if  and 0 if , 

Set , 



  


























另解

































































No. 27

, if  and  if  

Set 

ℒℒℒ

ℒ



ℒℒ



將 代入









 代入 



ℒ -1











另解 



















 Or 













No. 28

R = 1 kΩ, L = 1 H,  if andif  













No. 29









ℒℒ

 ℒ  代入

 



ℒ－1

 

 







No. 30

 and





ℒℒ

 ℒ  代入











ℒ－1

 

 



No. 31

  

ℒ

 ℒ  代入

  



ℒ－1

No. 32

if and if 













No. 33

  and 



And   then 

 

ℒℒ

 ℒ  代入

 



ℒ－1



 

 

No. 34

 



And   then 

 

ℒℒ

 ℒ  代入

 



ℒ－1



 

 



 



Jumps occur at t＝0.5 and t＝0.6

No. 35







 

ℒℒ

 ℒ  代入







ℒ－1



 

 

 



另解



 對 t 微分



Or 





Transform both sides of (2)



因於t＝二點不連續，

，Laplace transformation 積分要特別考量





From (1) At t＝0 

Since  and 









ℒ－1



 

 

 



No. 36













ℒℒ

 ℒ  代入



 



ℒ－1

 

 

 



另解 if 0<t<1 and 0 if t >1

 對t 微分



Or 





 

Transform both sides of (2)



因於t＝1點不連續，，Laplace transformation 積分要特別考量





From (1) At t＝0 

Since  and 



 

ℒ-1









No. 37







 

ℒℒ

 ℒ  代入







ℒ－1



 







另解

 對 t 微分

 



ℒ

  代入







ℒ－1

 







No. 38



 Or 



Laplace transform on both sides of 

 ℒ  代入









ℒ－1

 

 

No. 39



 Or 



Laplace transform on both side of 

 ℒ  代入

 



ℒ－1

 

 

No. 40

 





Laplace transform on both side of 

 ℒ  代入

 







  






