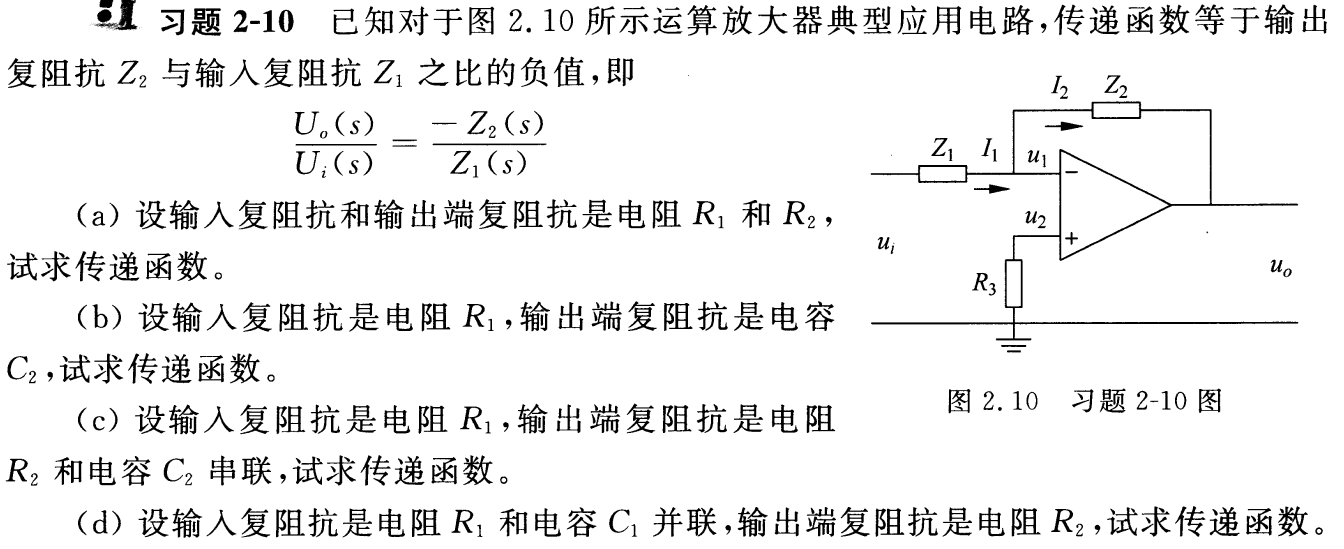
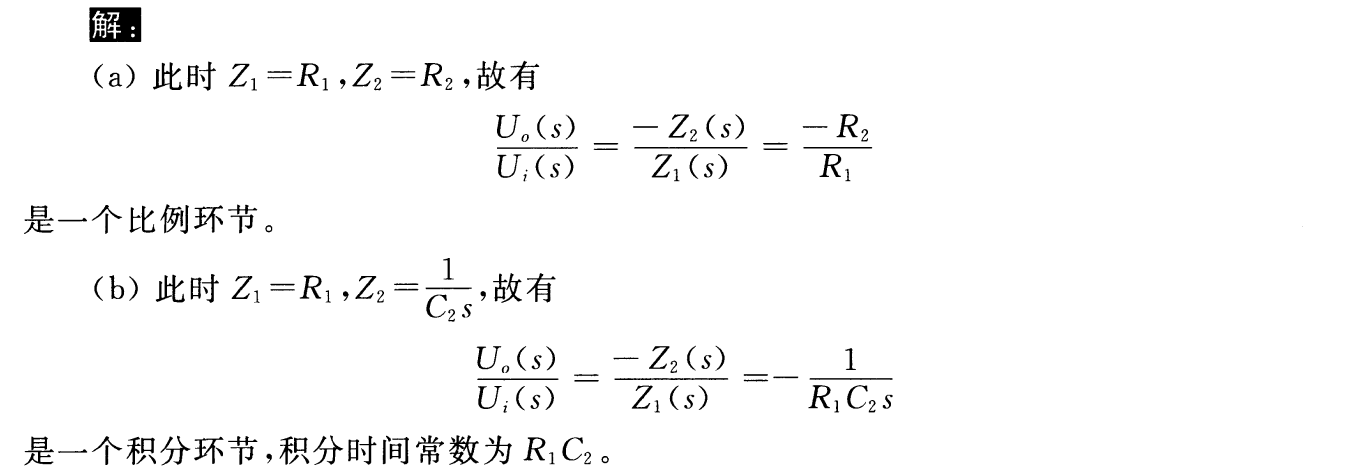
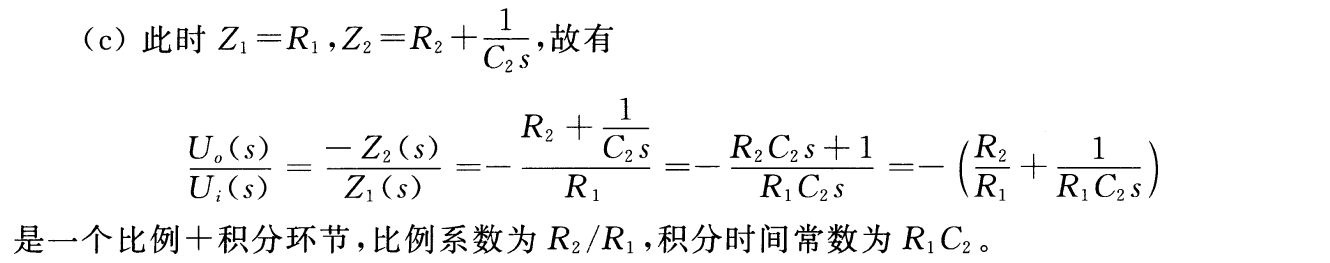
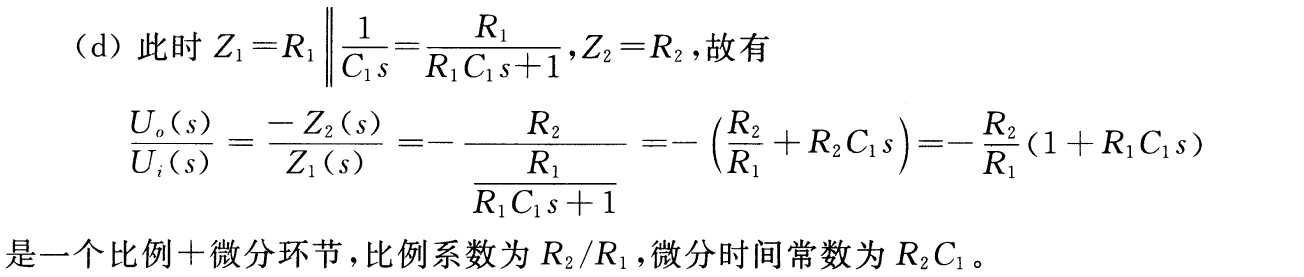
**一.由电路图进行系统建模**

1、

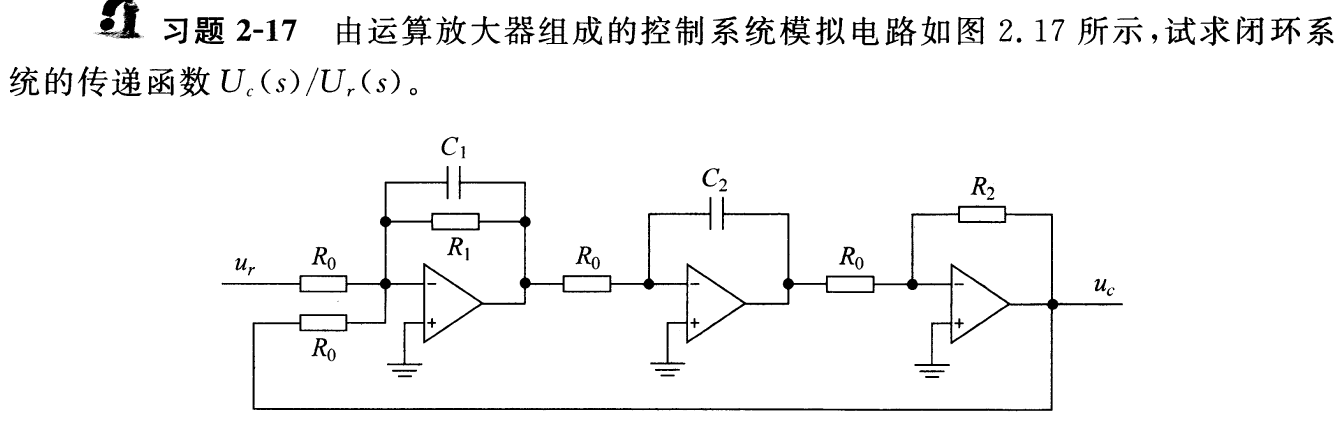


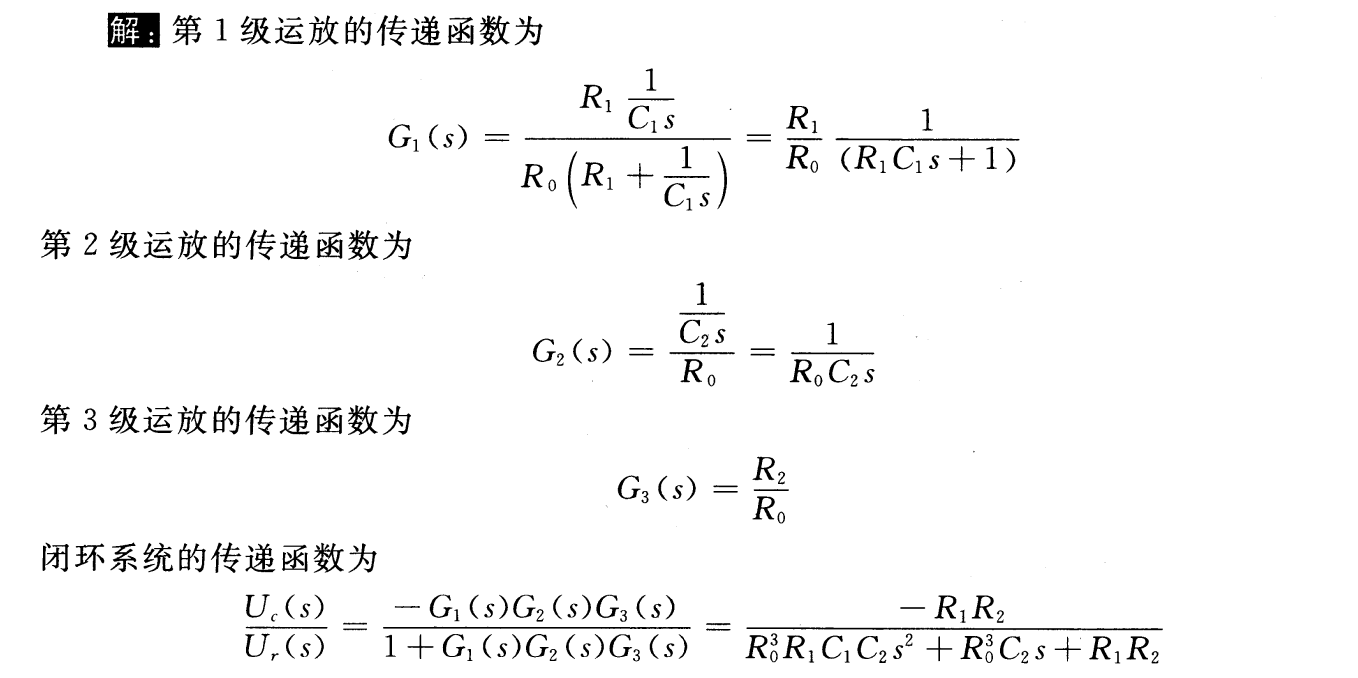




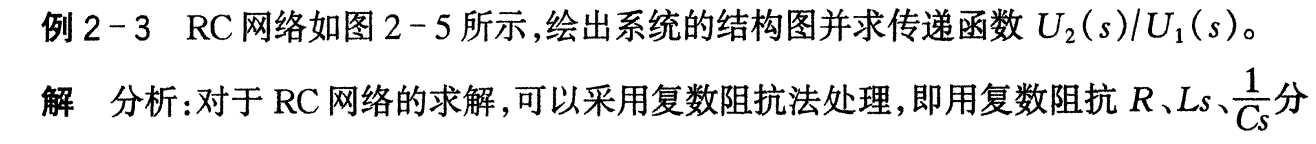


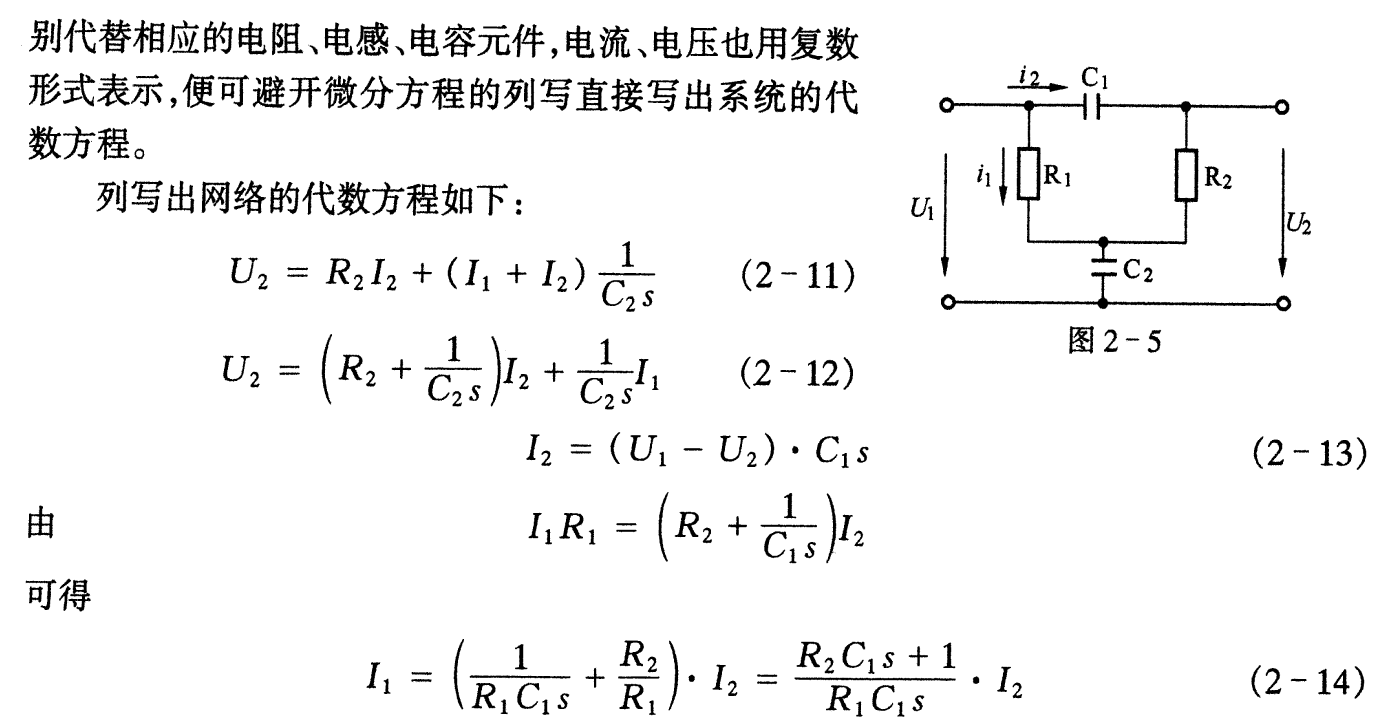
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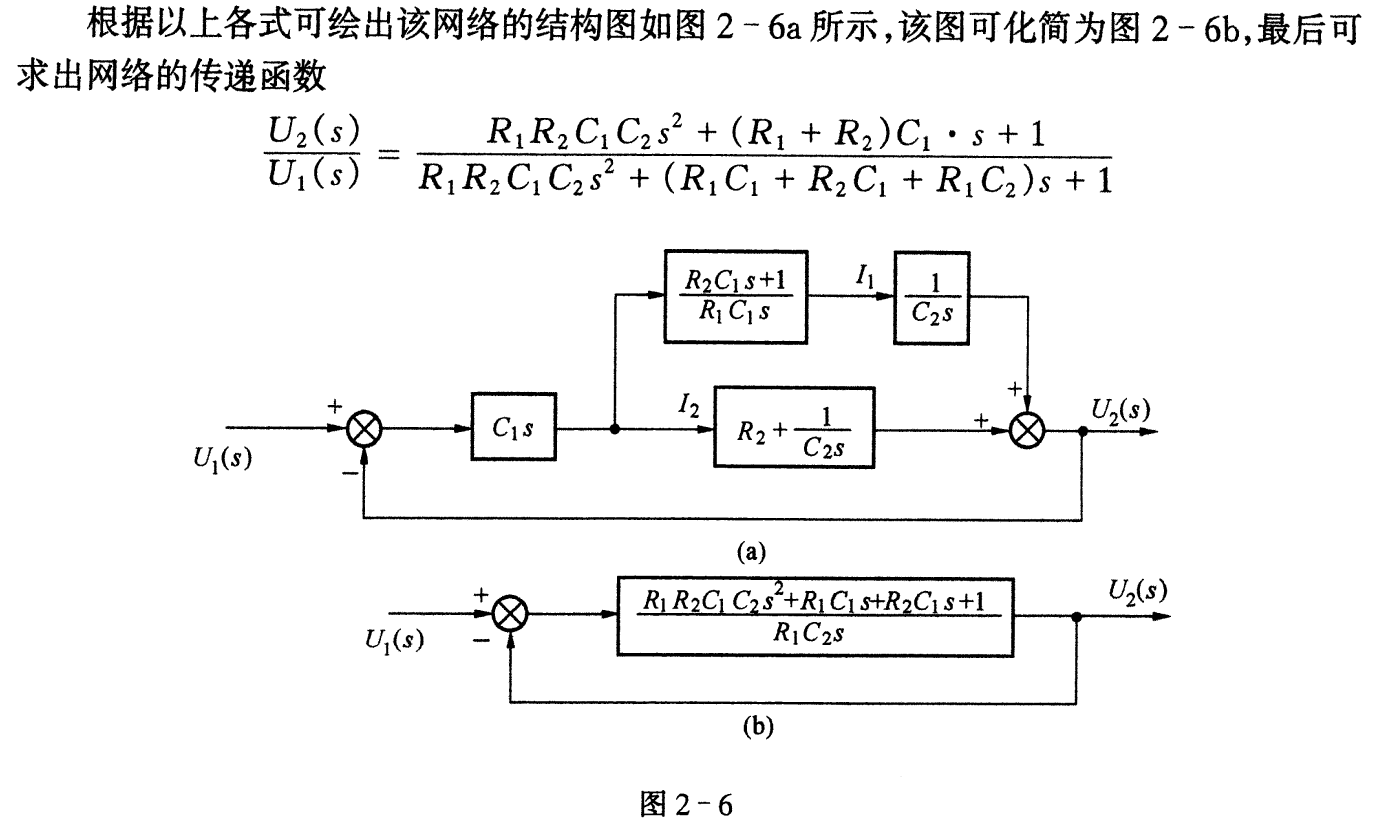




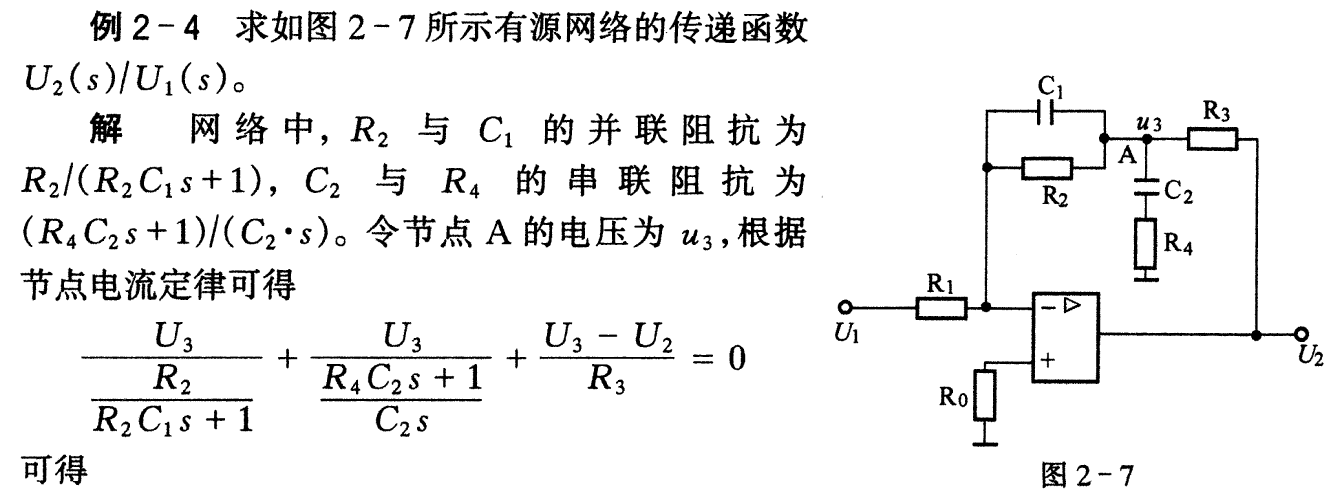
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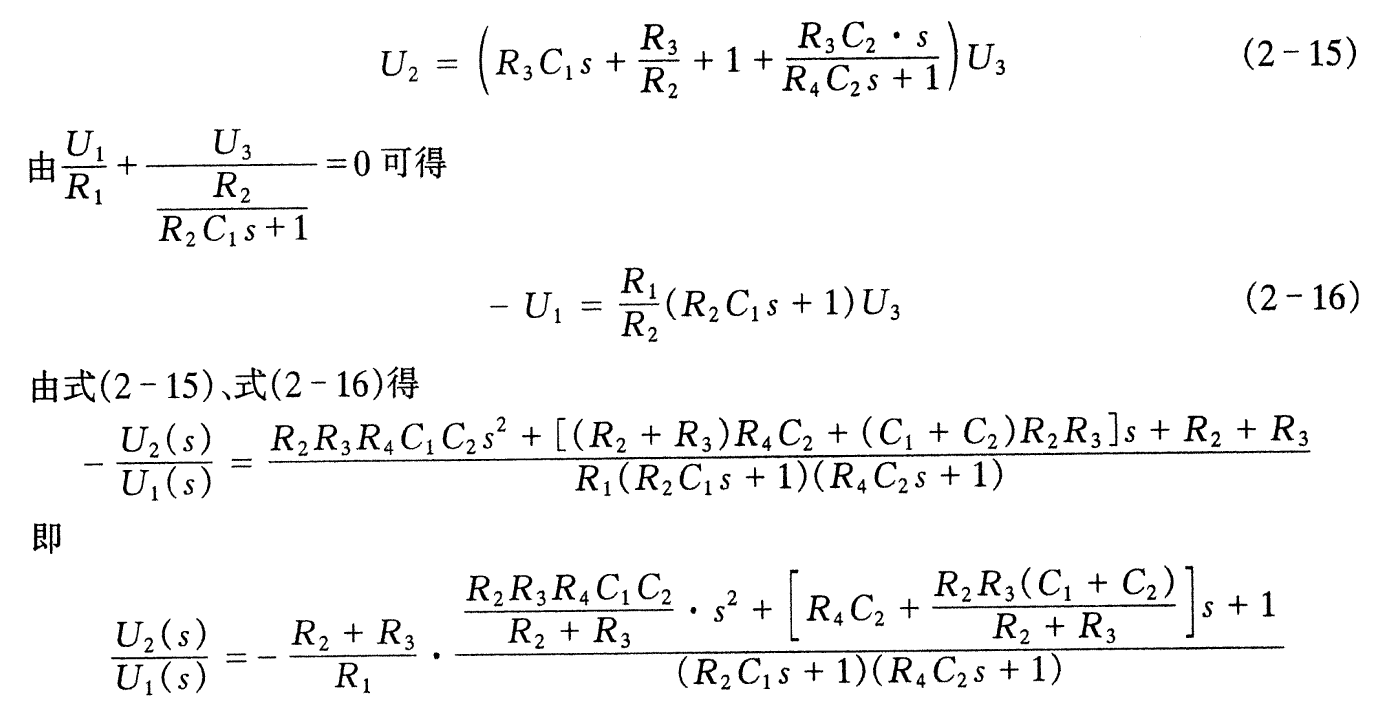




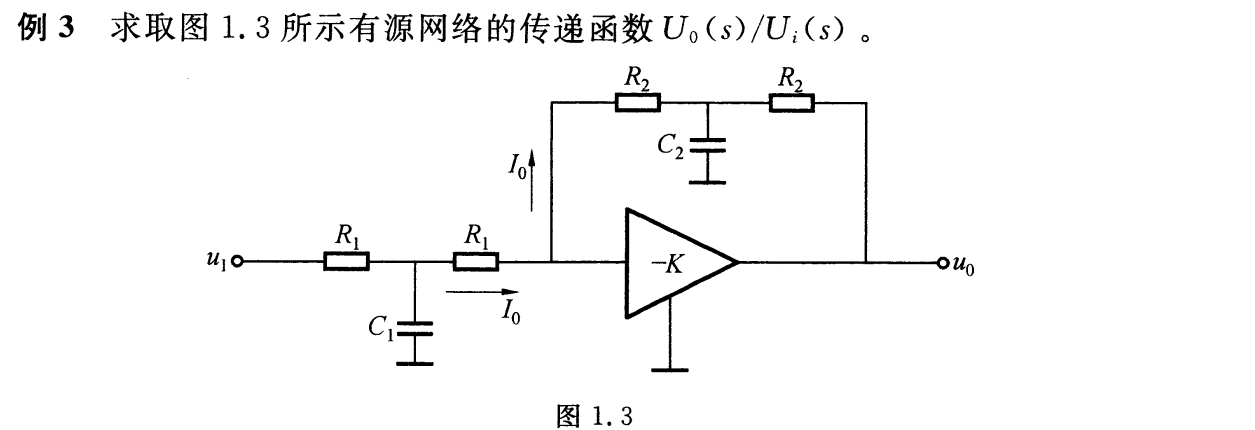


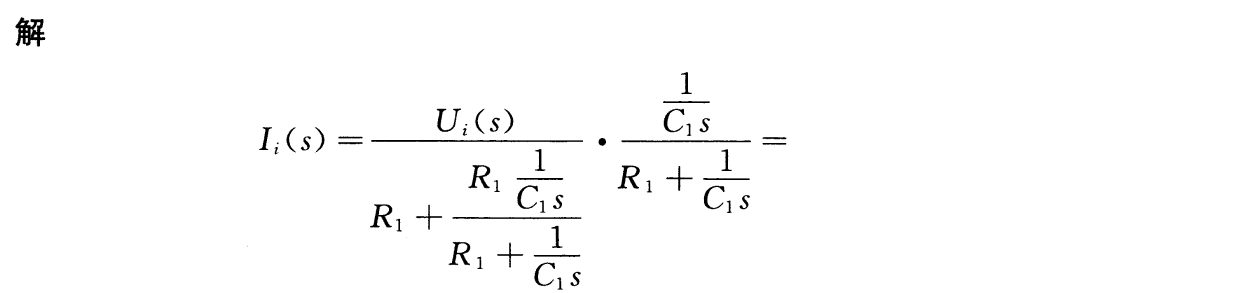
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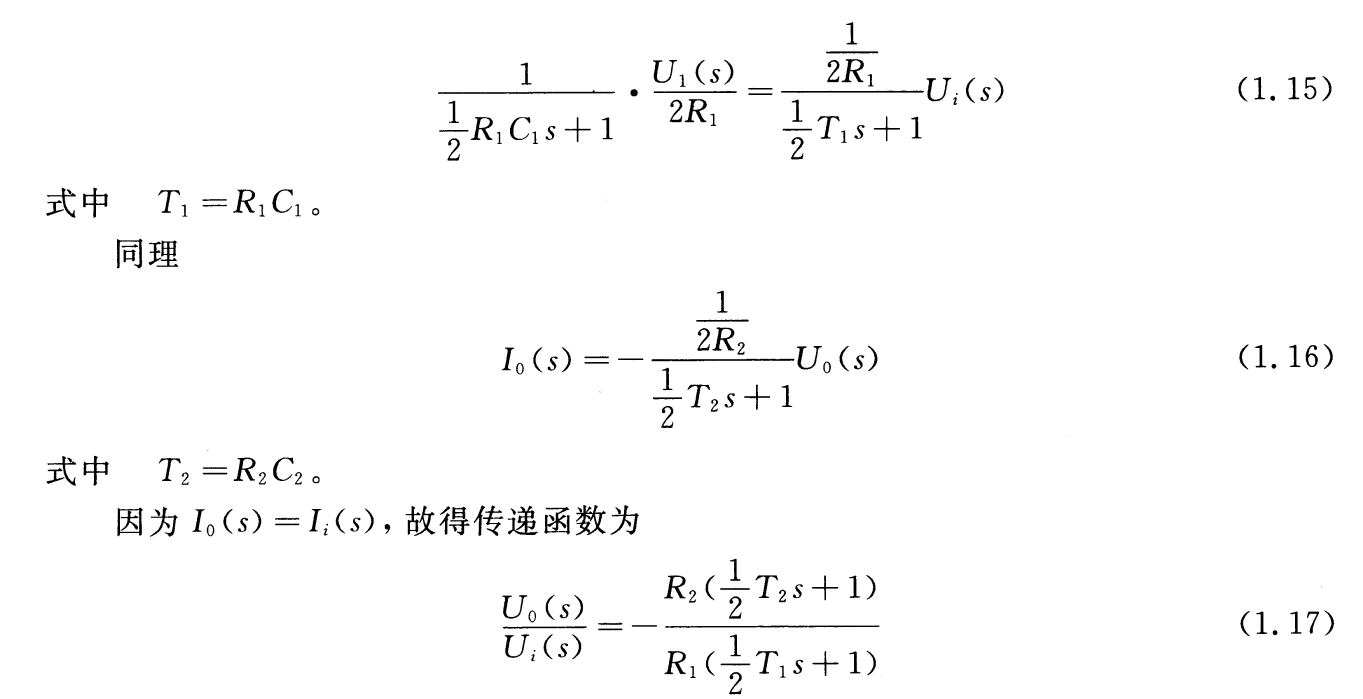




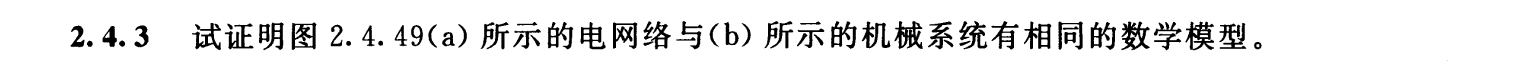
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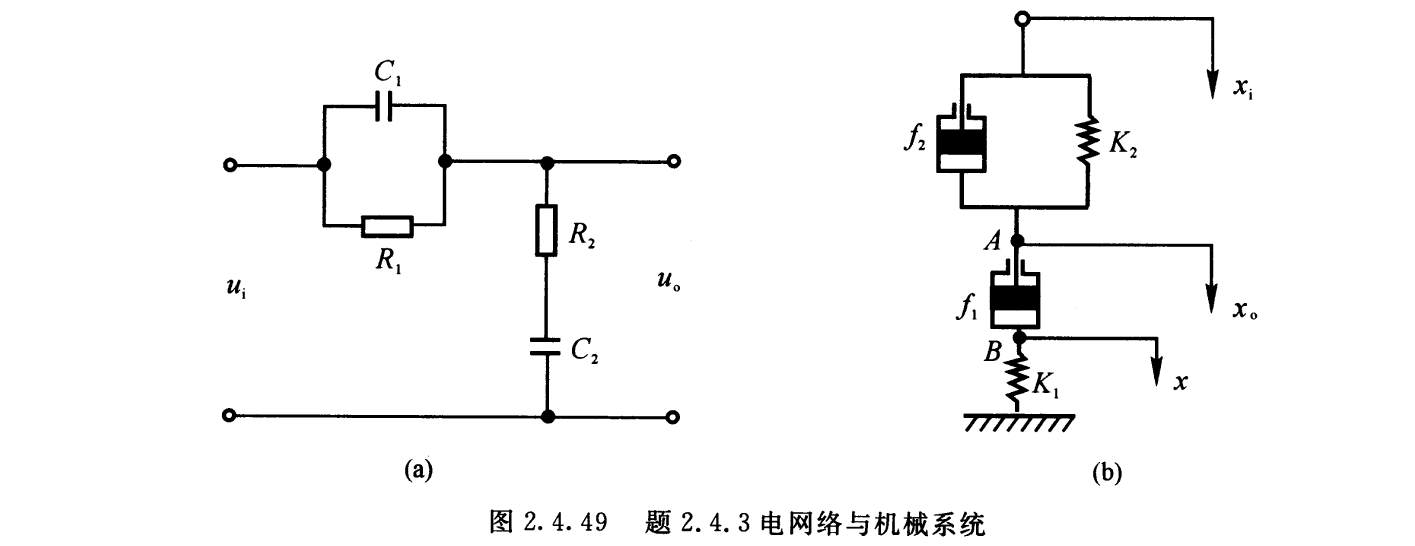


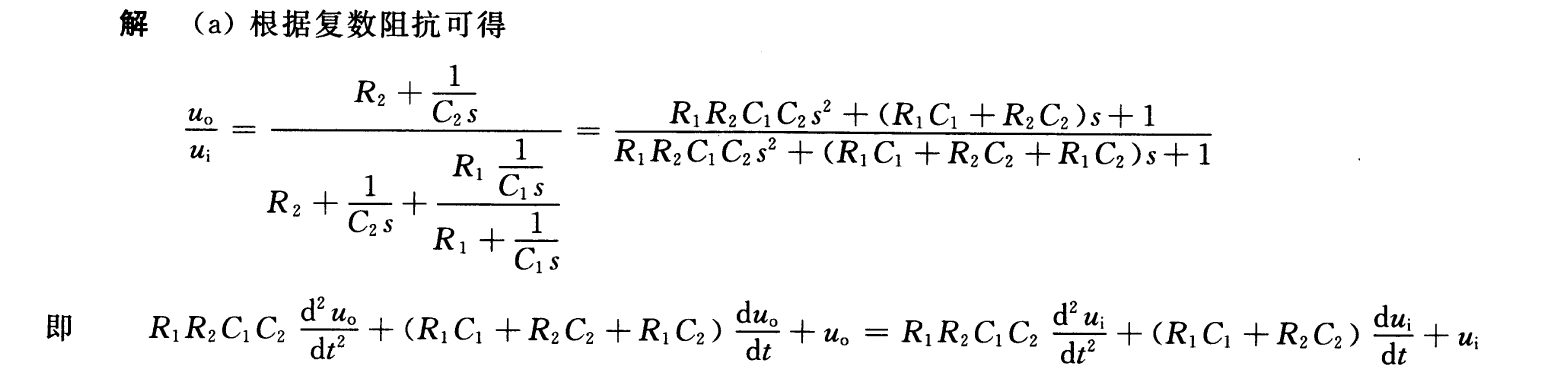


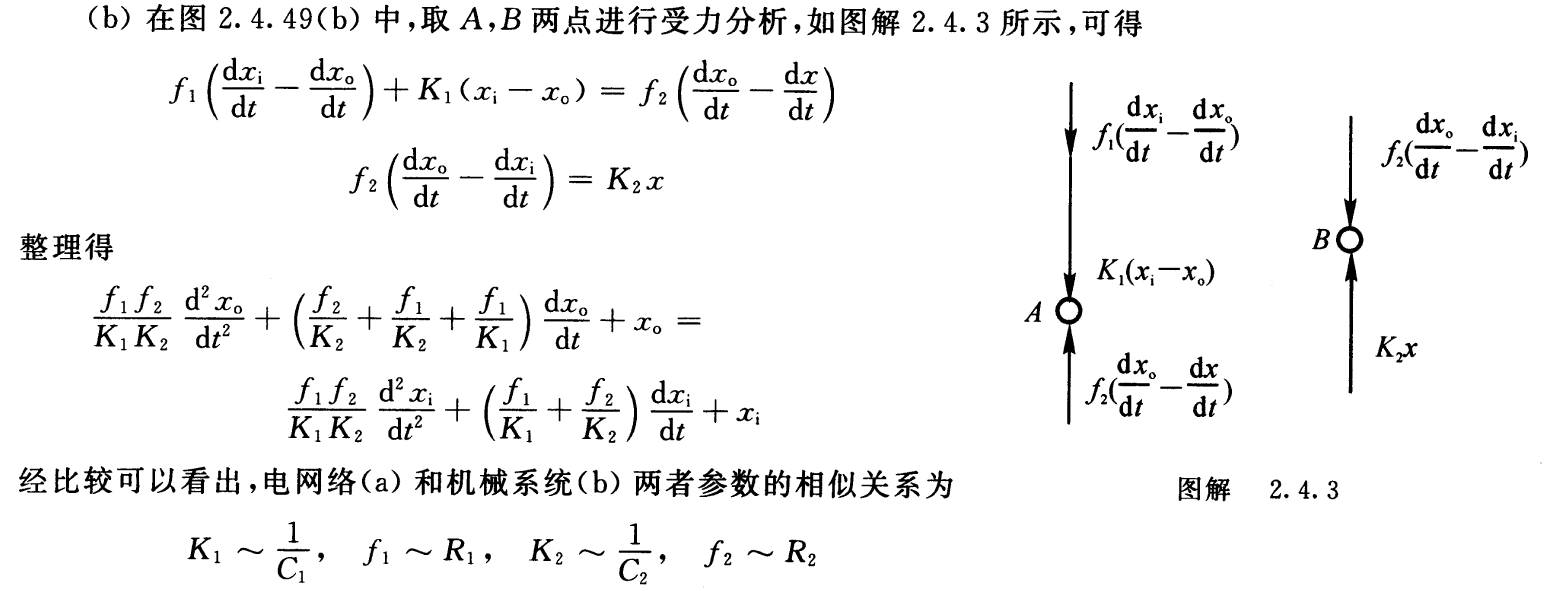


6、



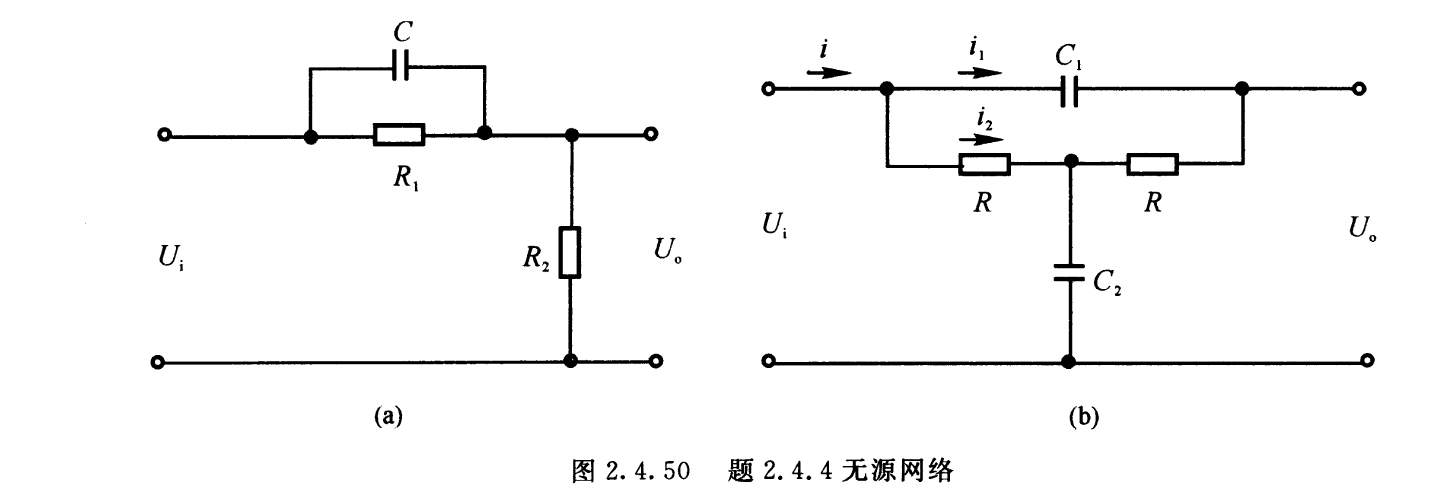


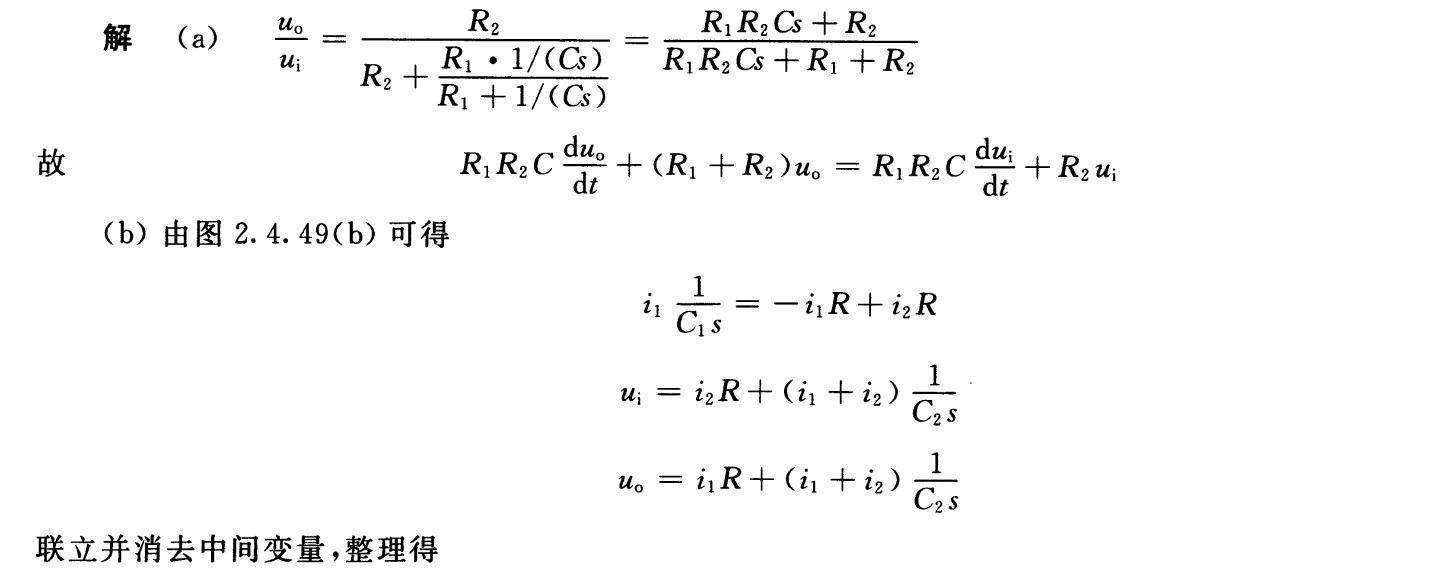


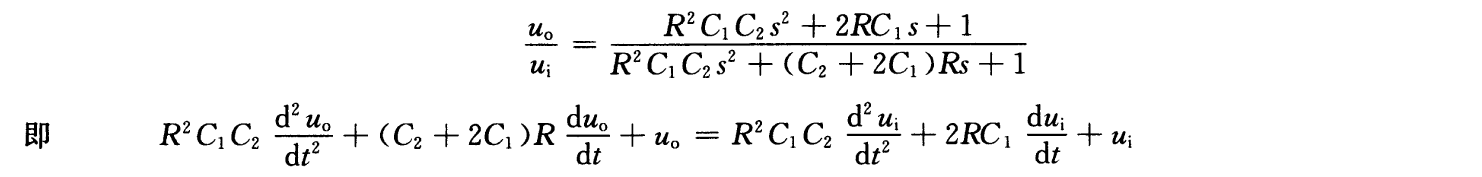


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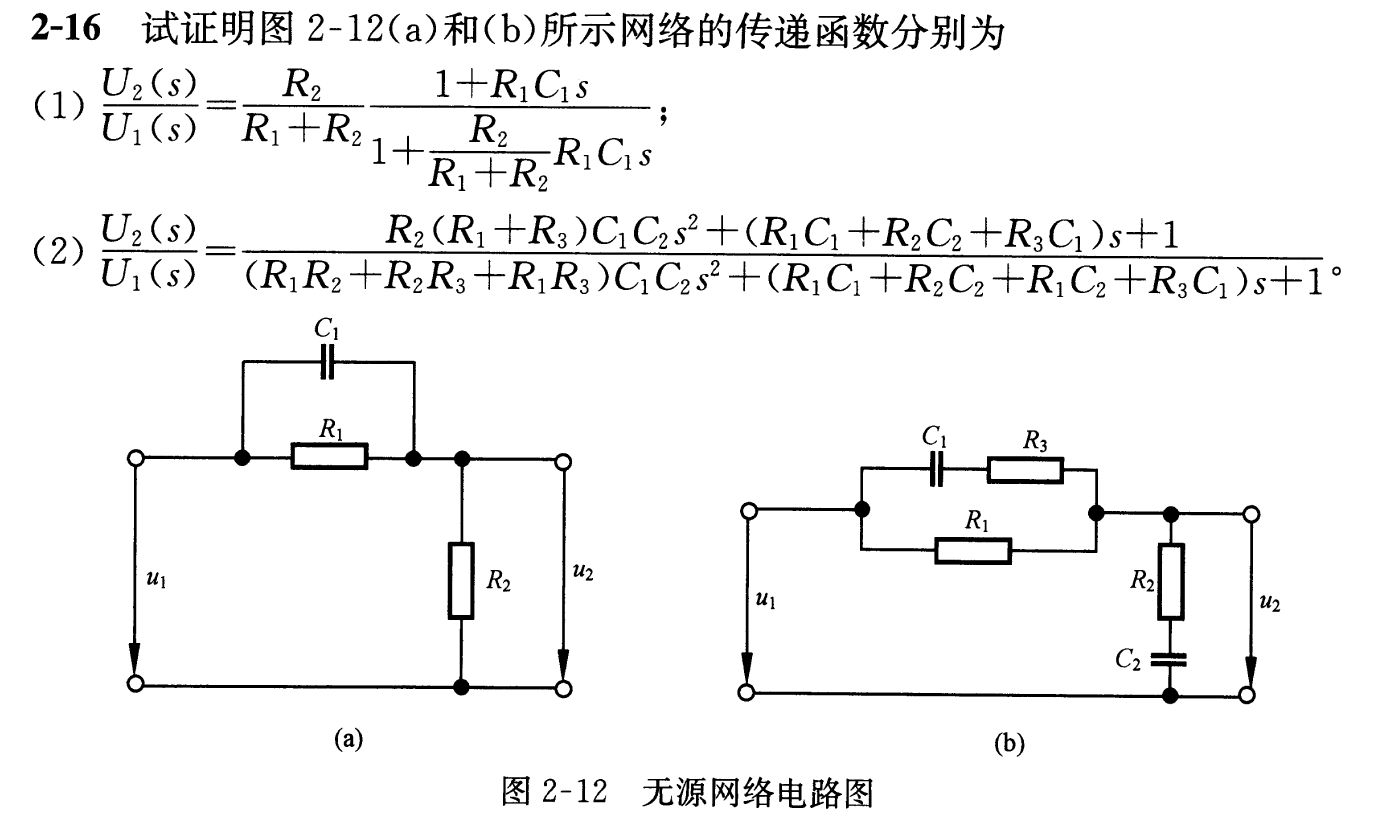


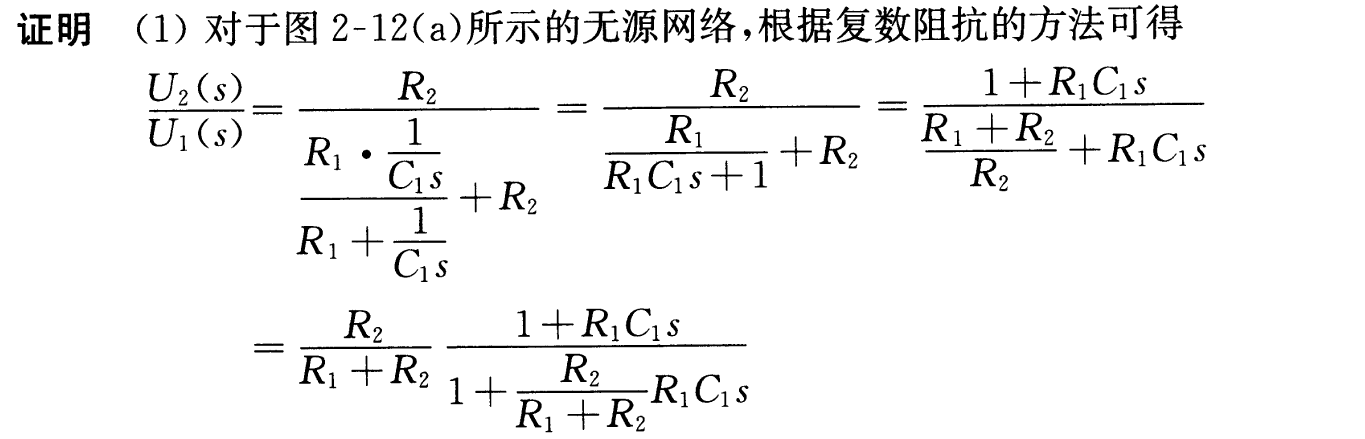


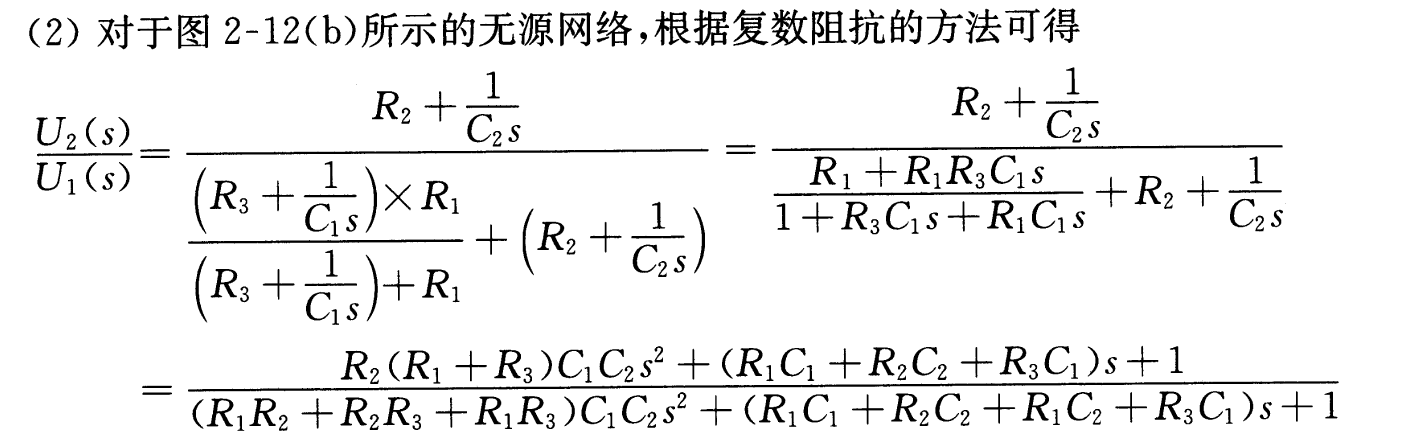




8、

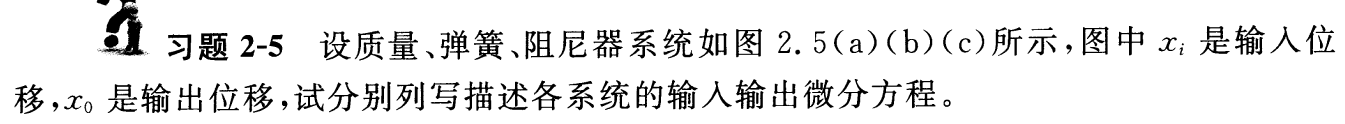


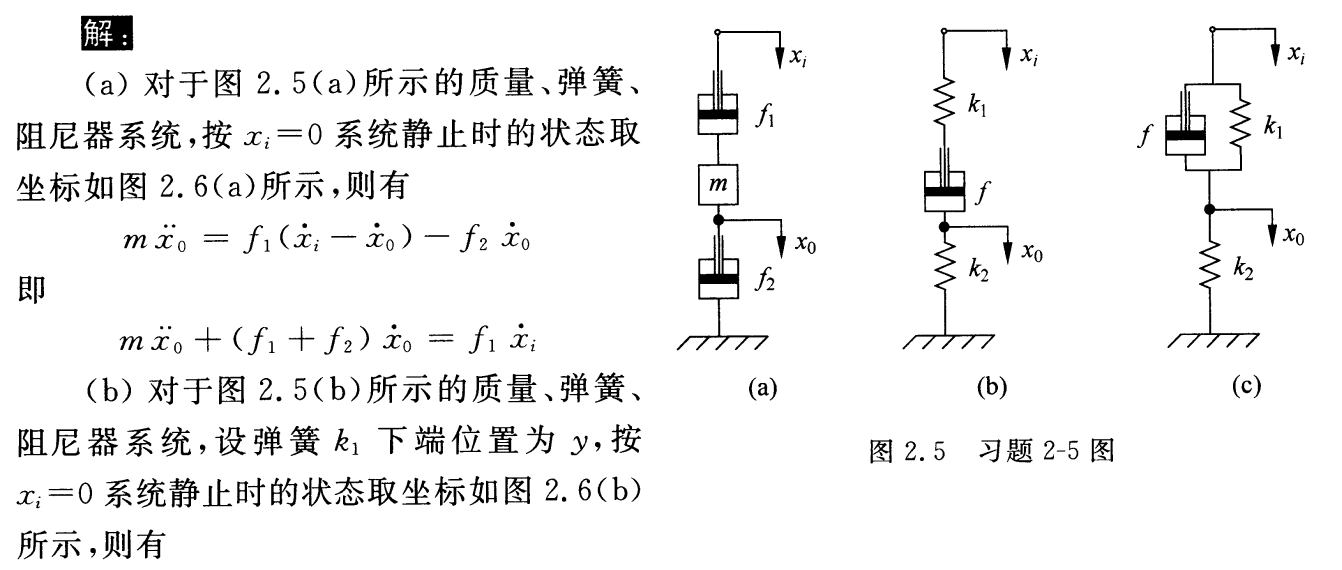


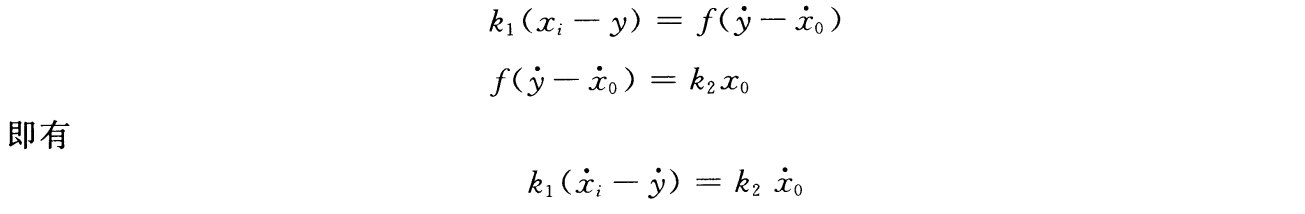


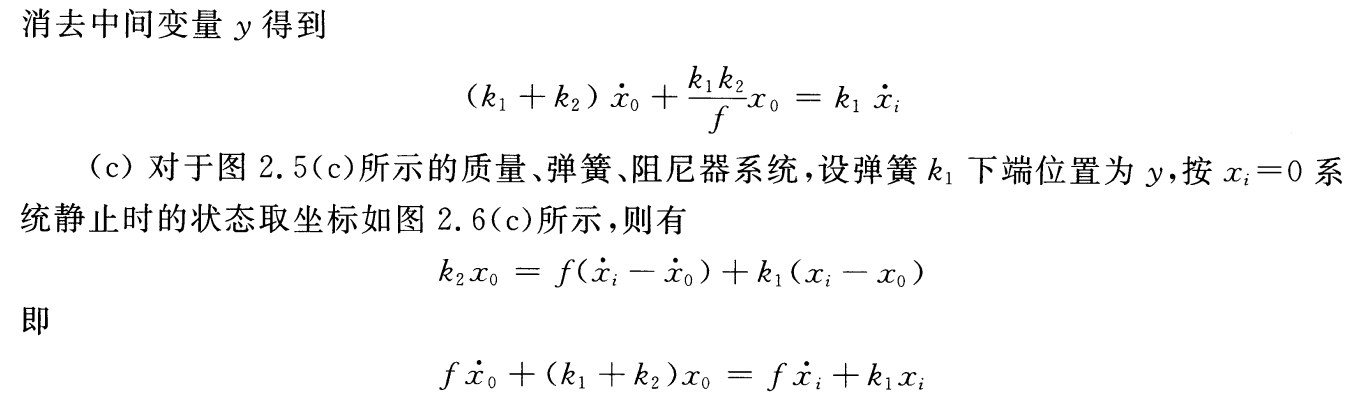
**二.由机械系统进行系统建模**

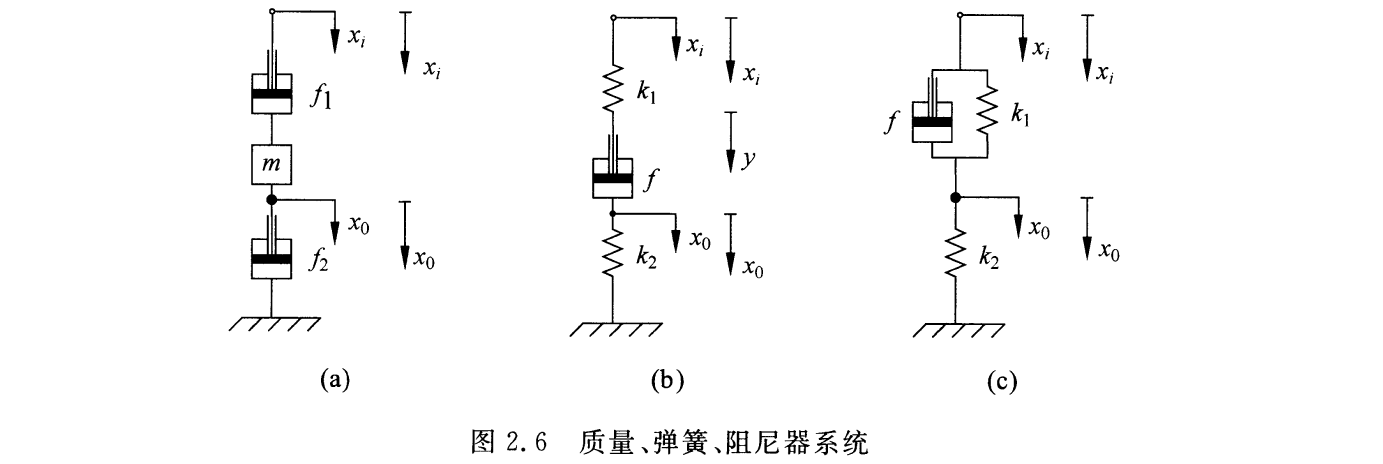
1、



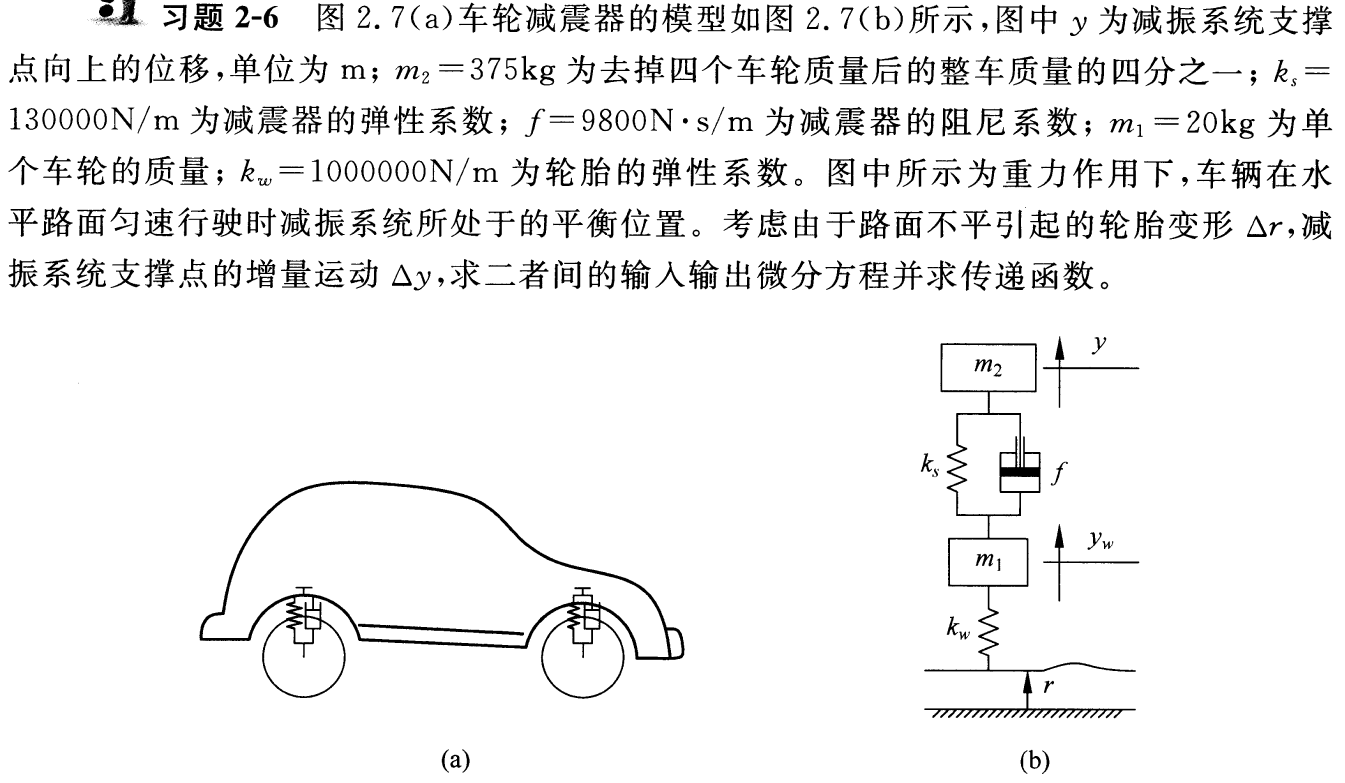


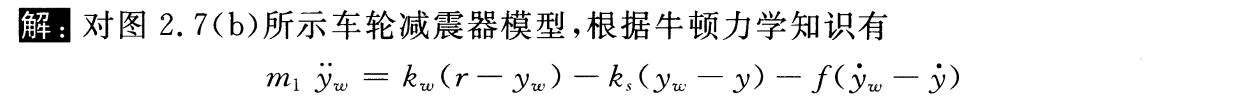


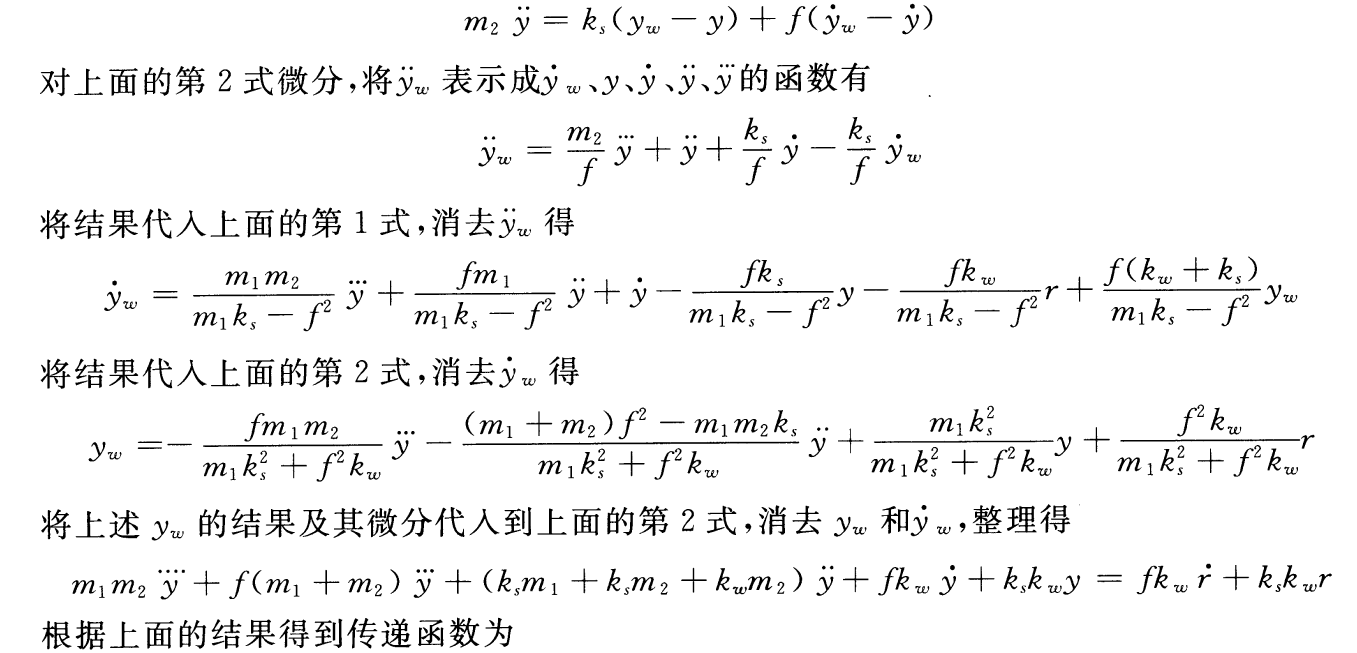


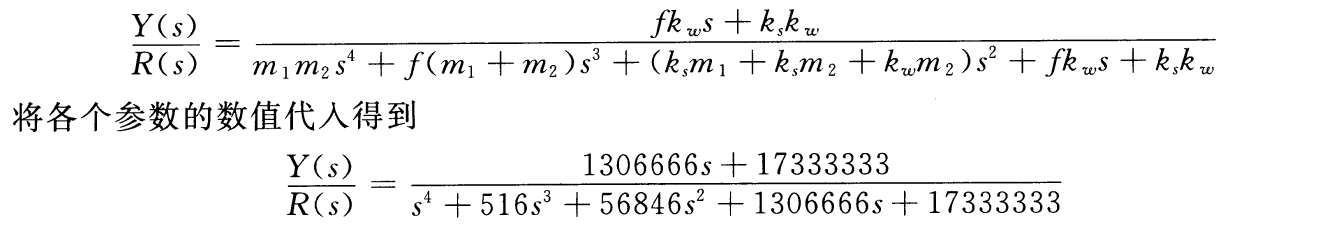


2、

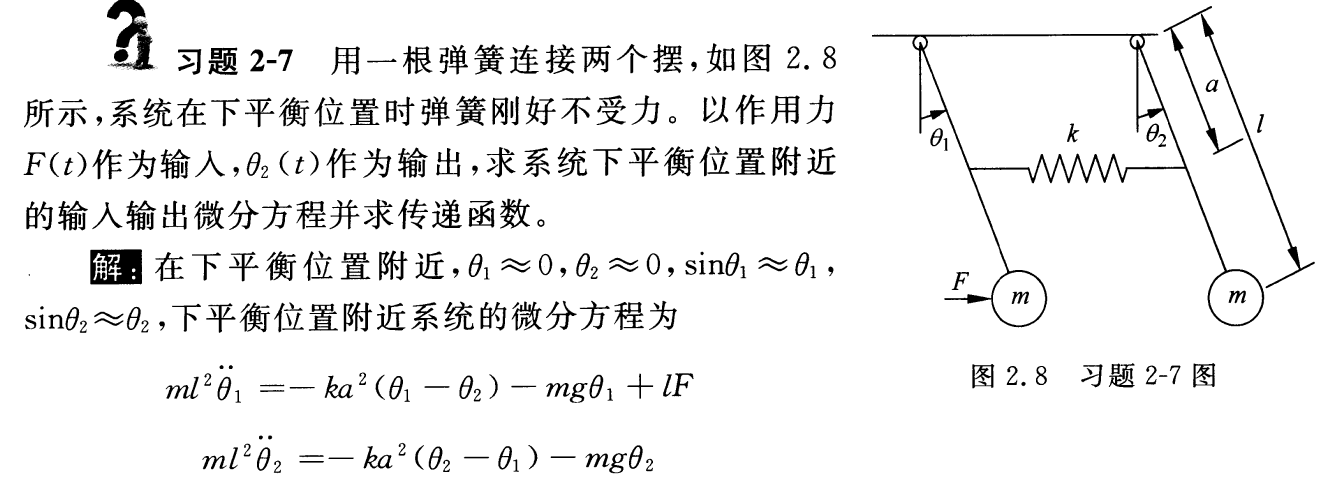


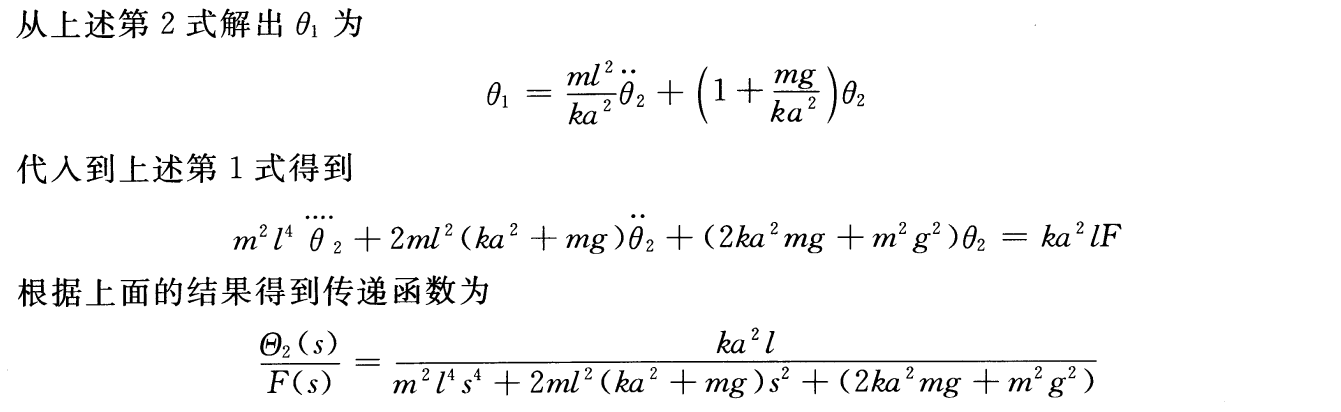




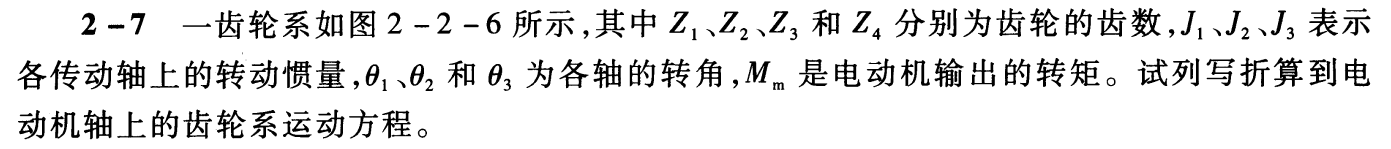


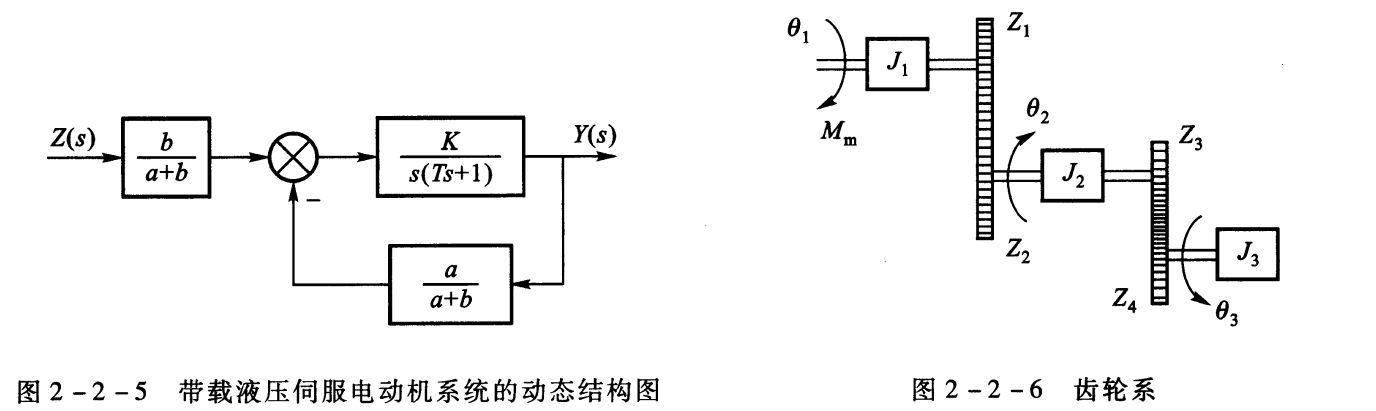
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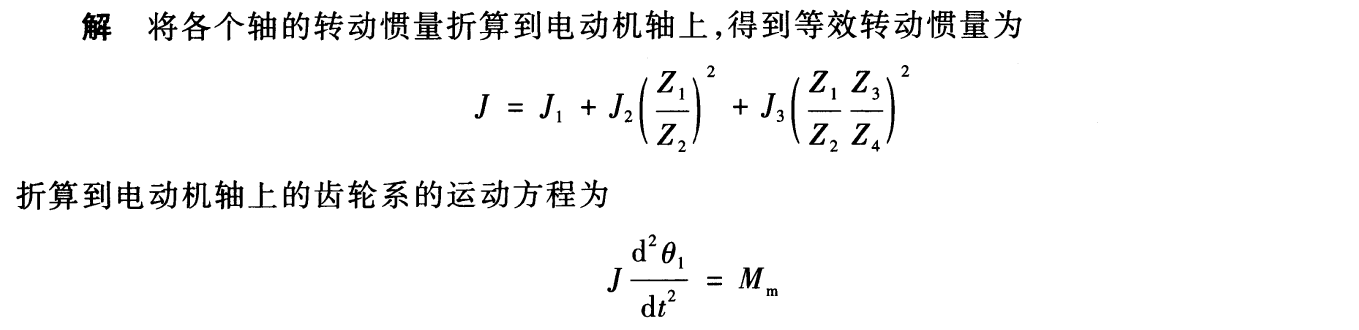




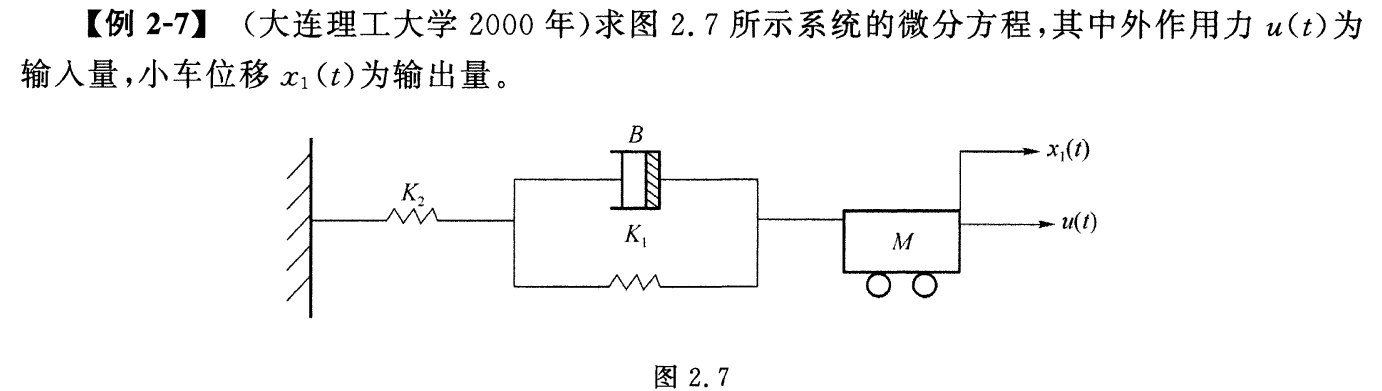
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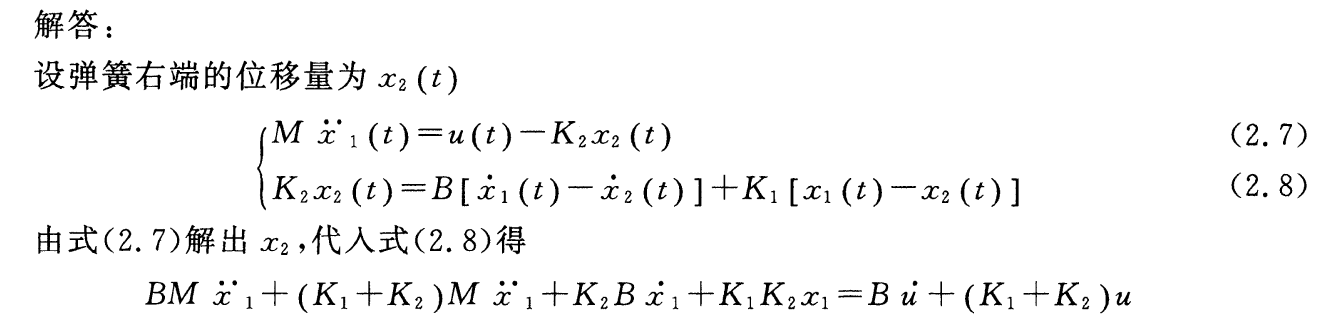




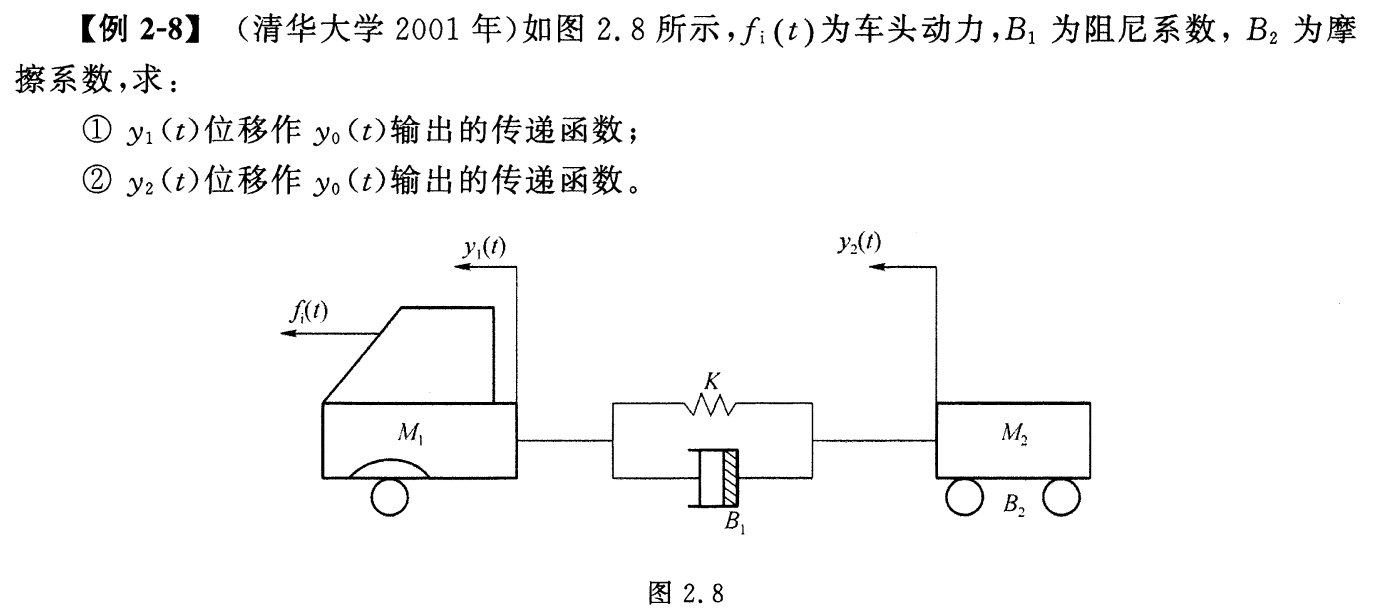


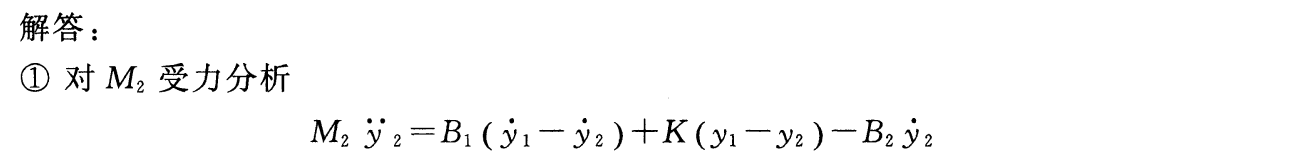
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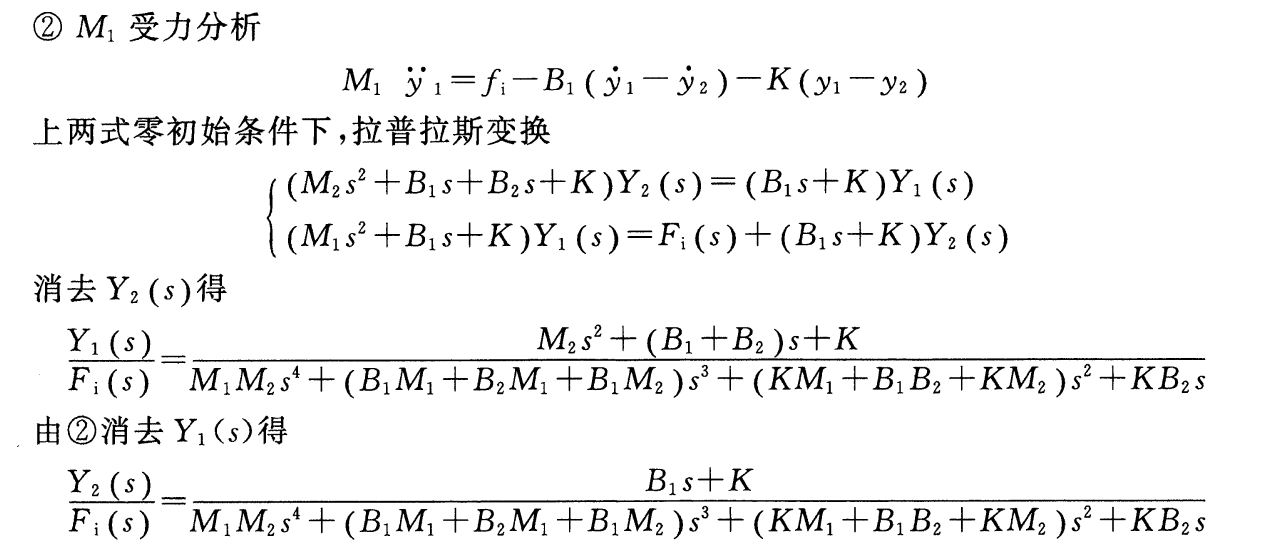




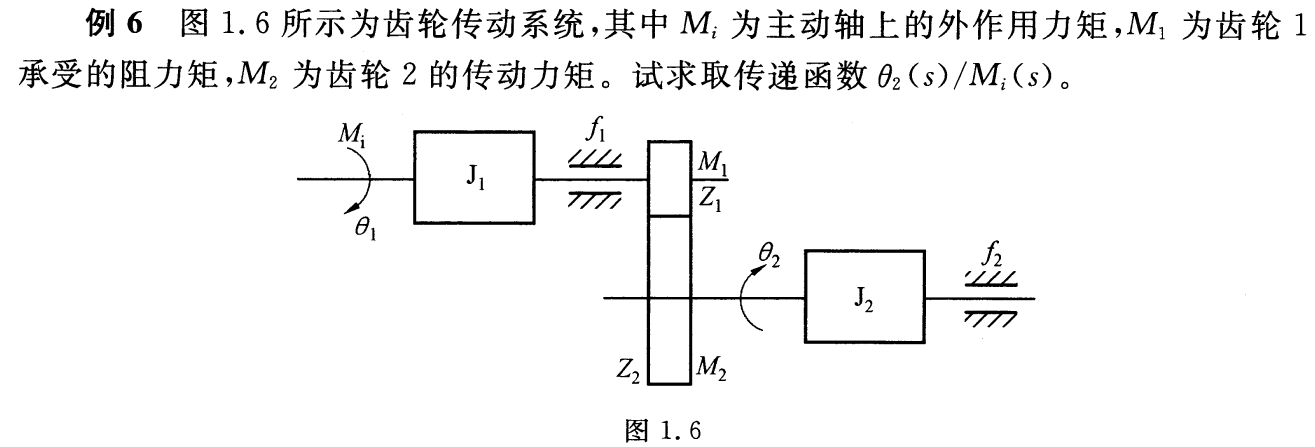
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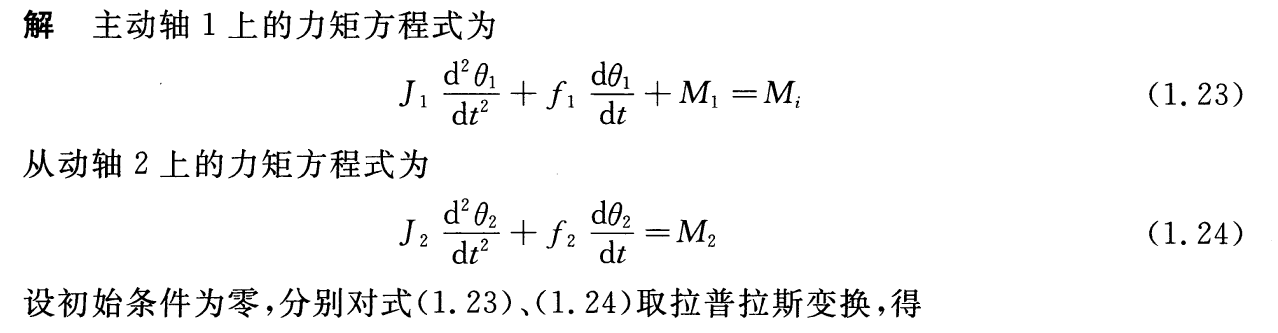


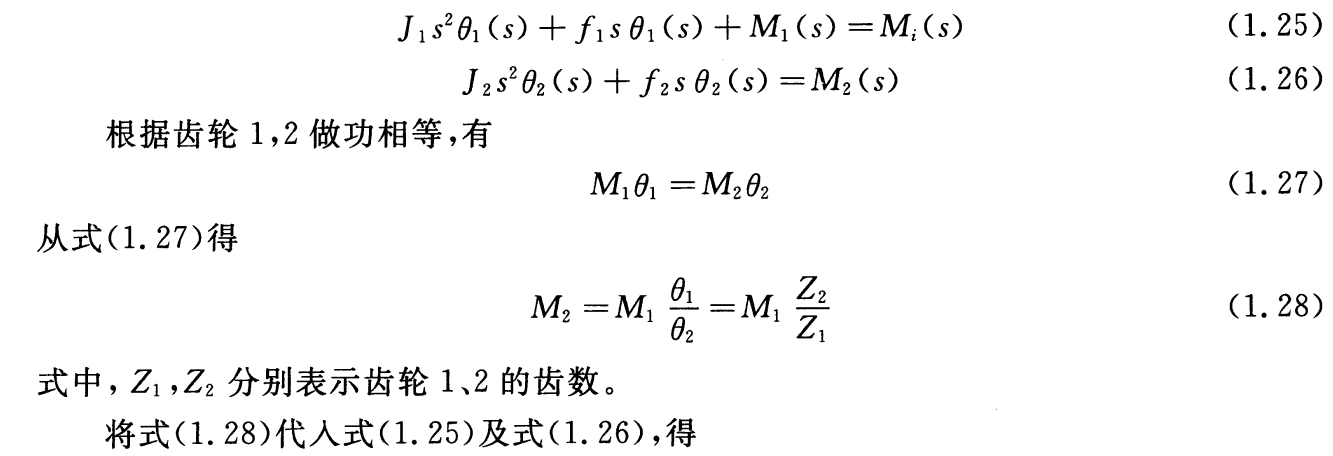


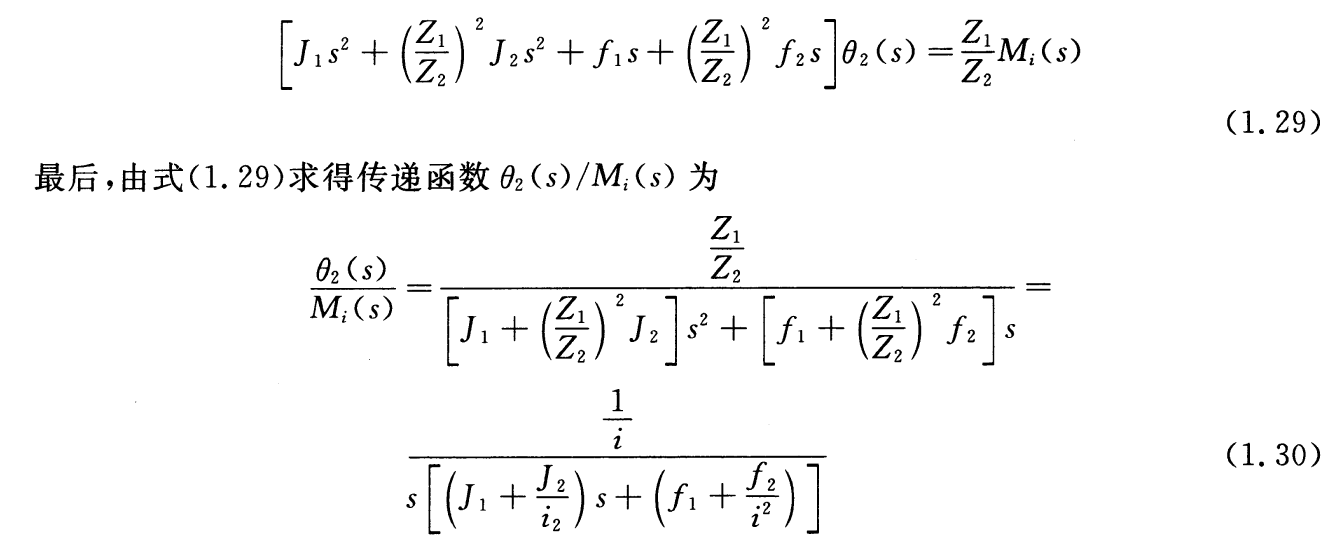


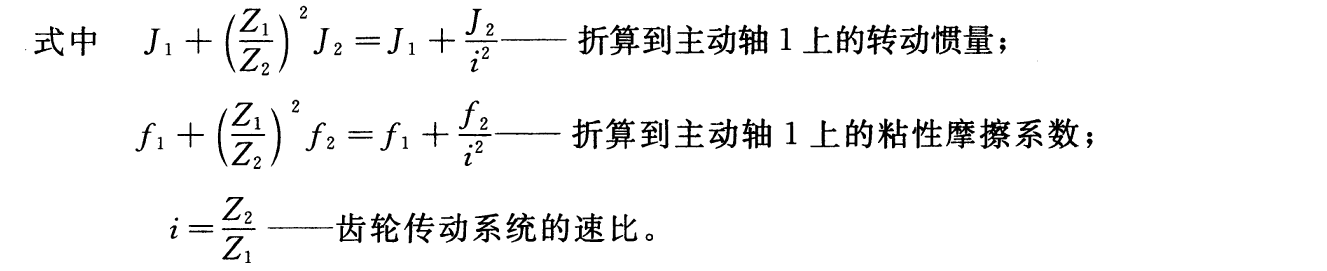
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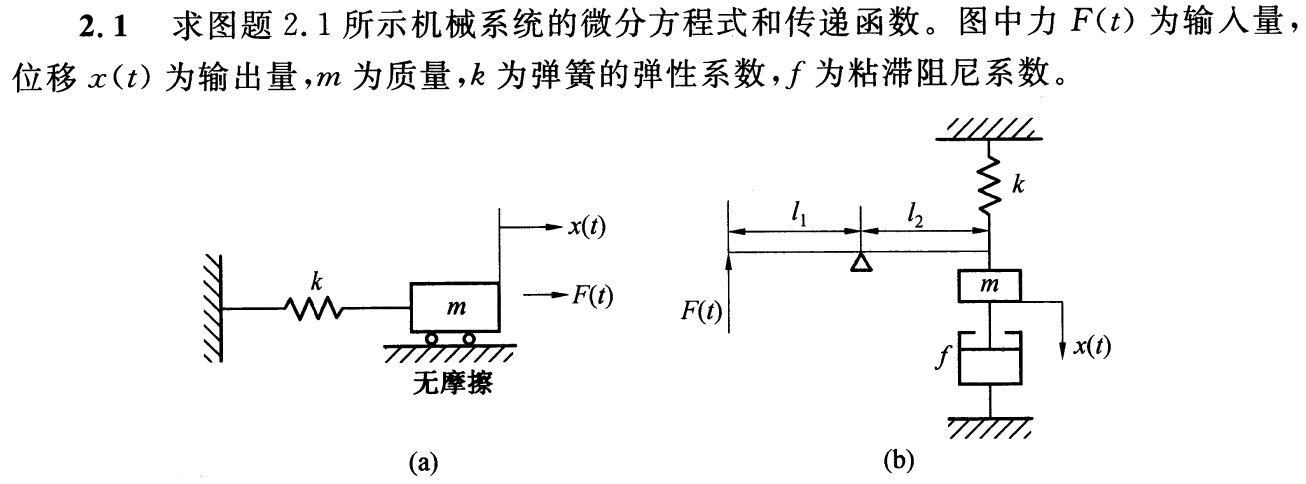






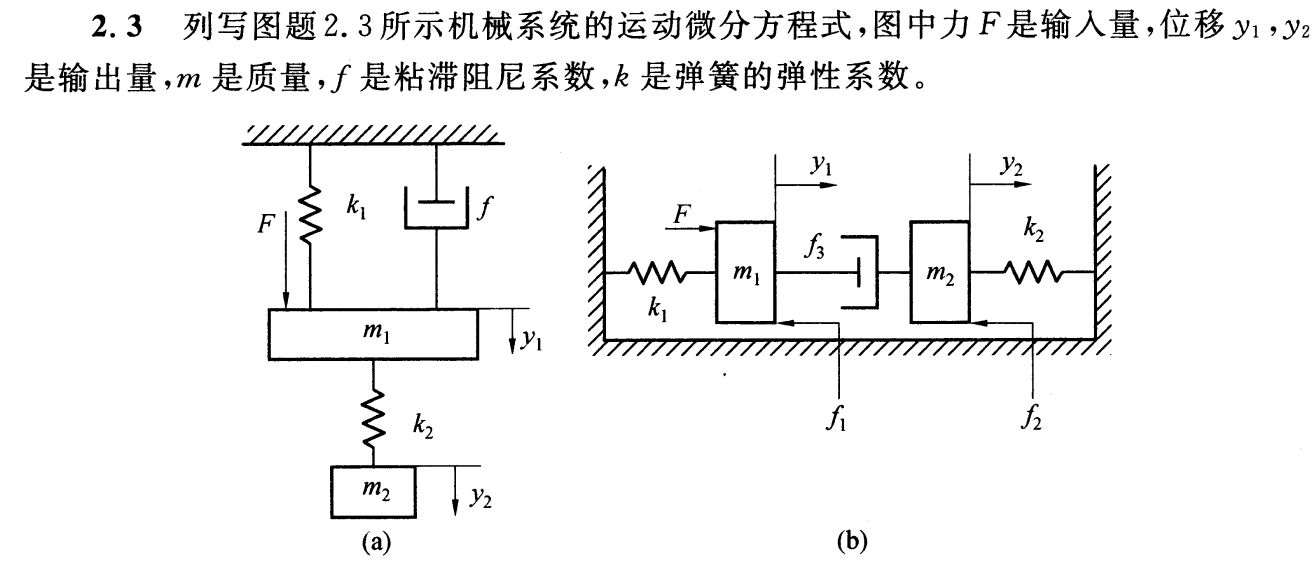


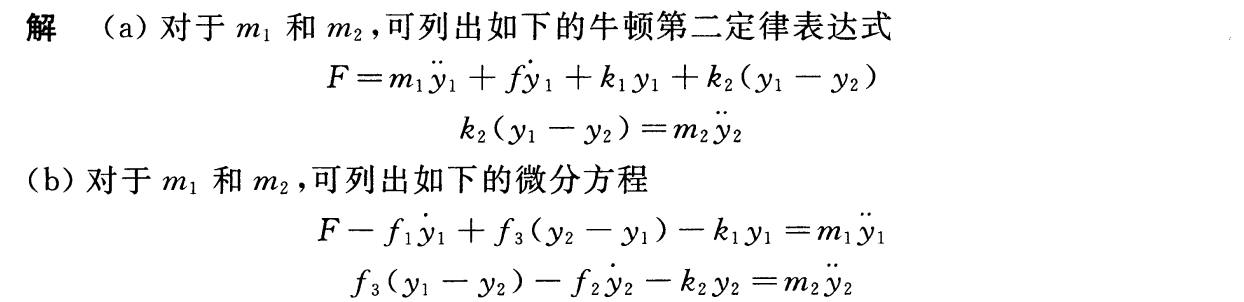
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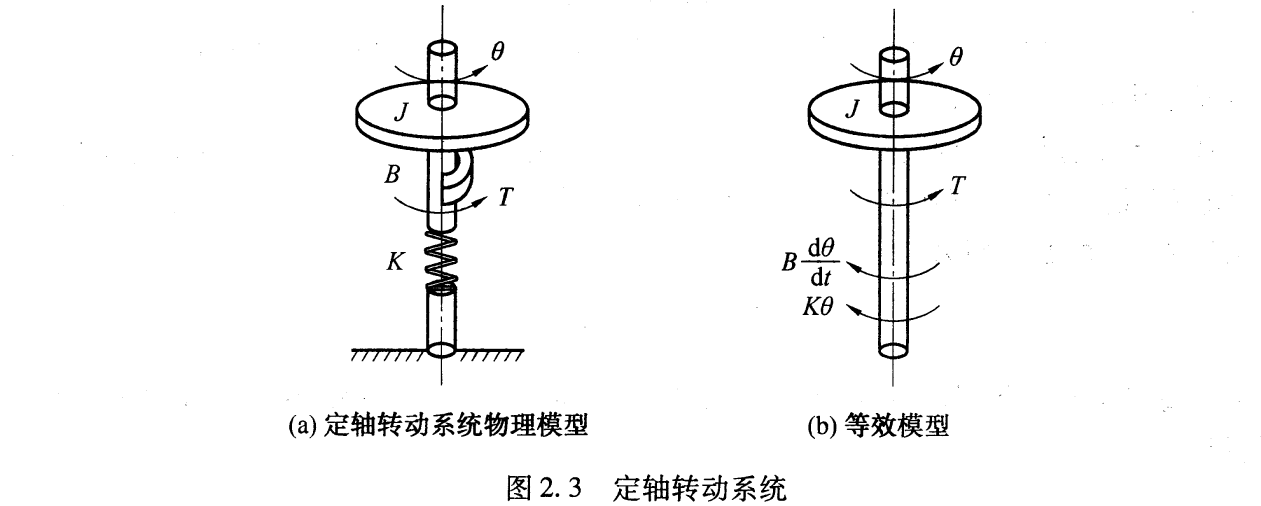
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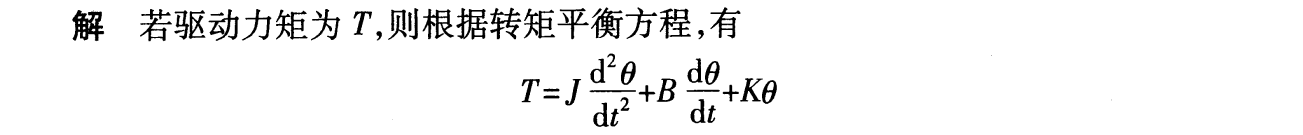




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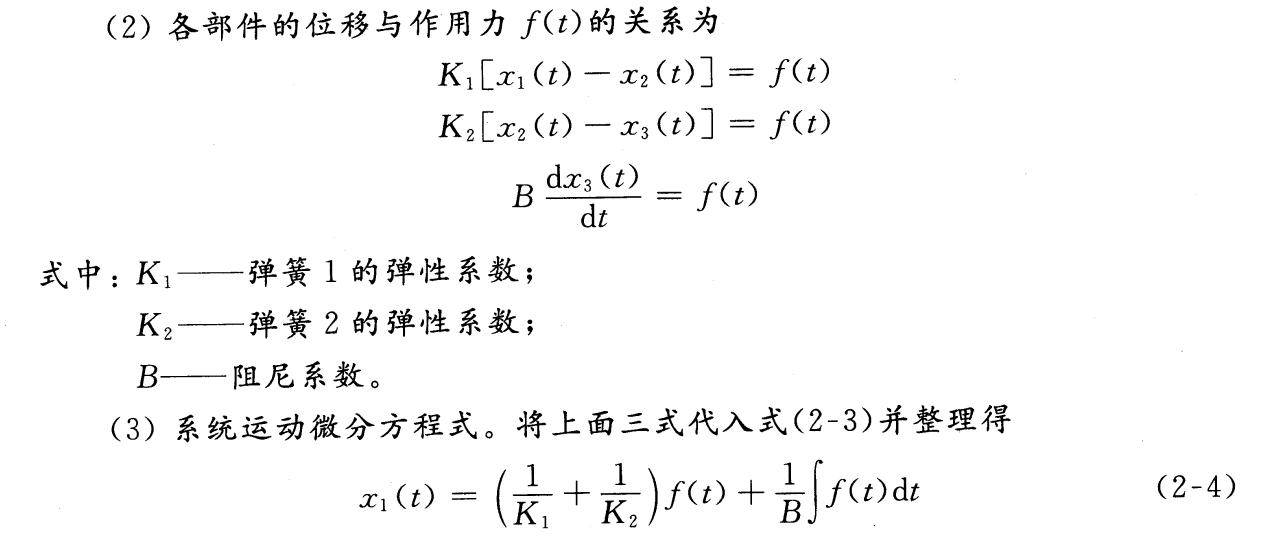


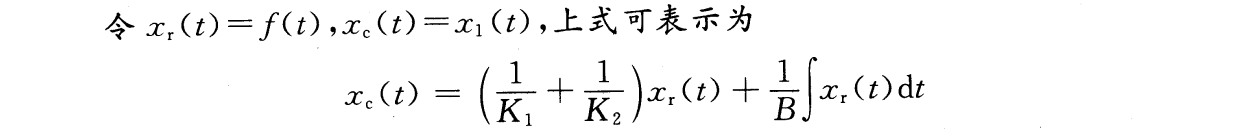




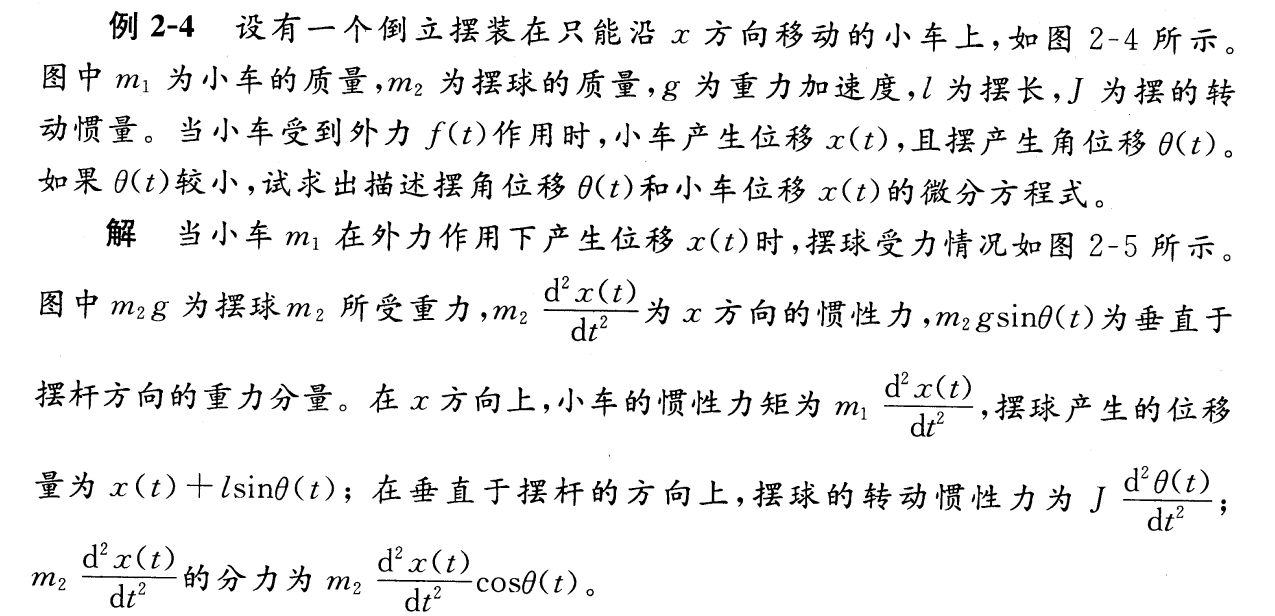
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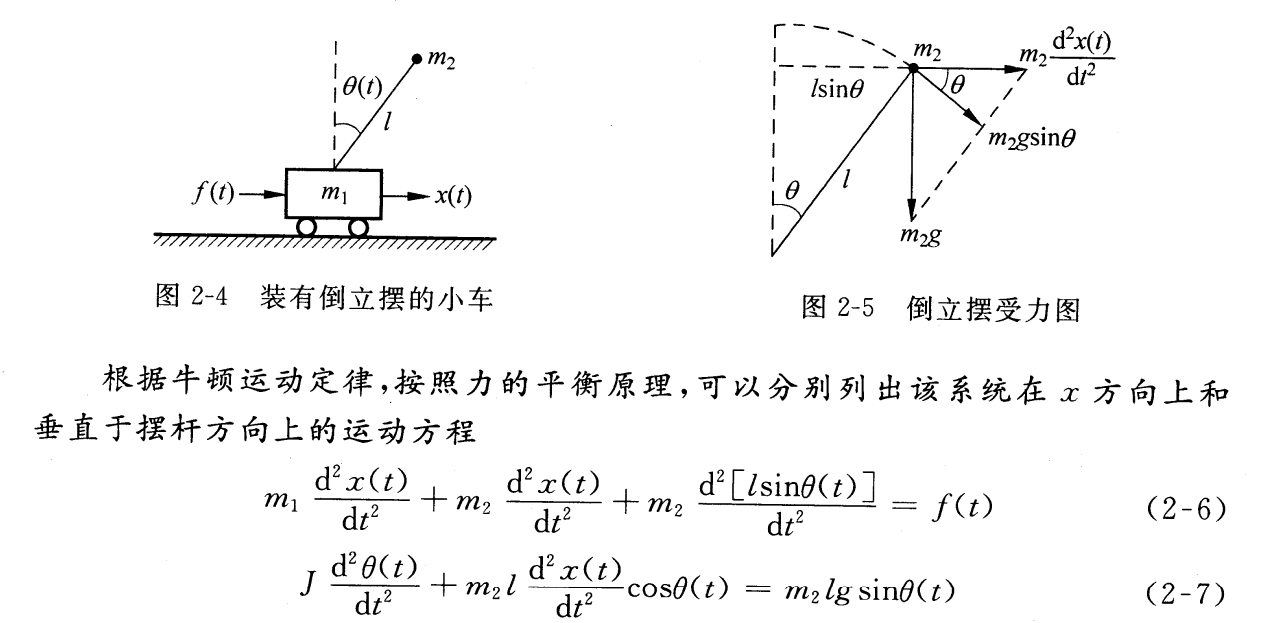


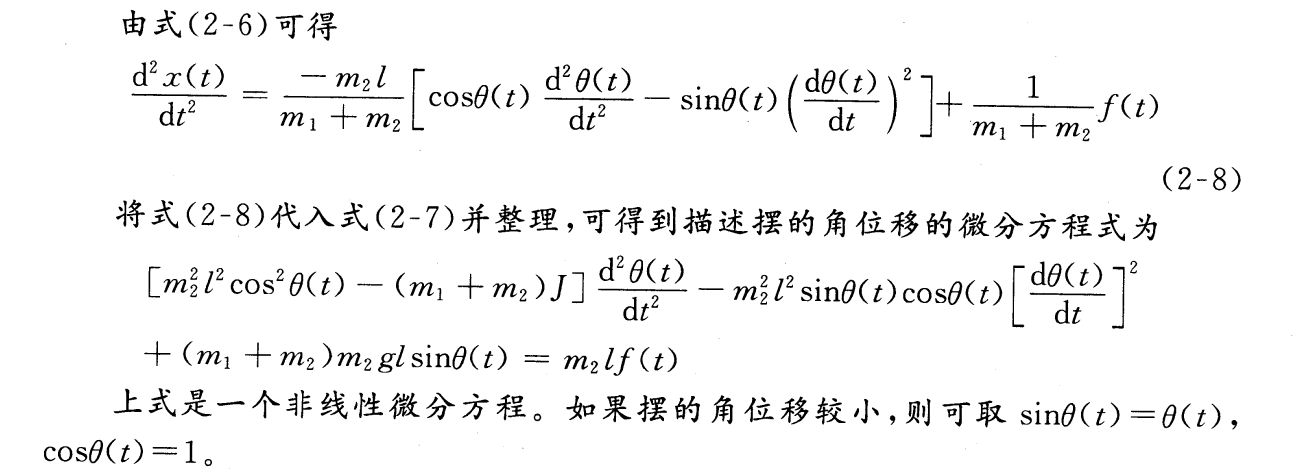


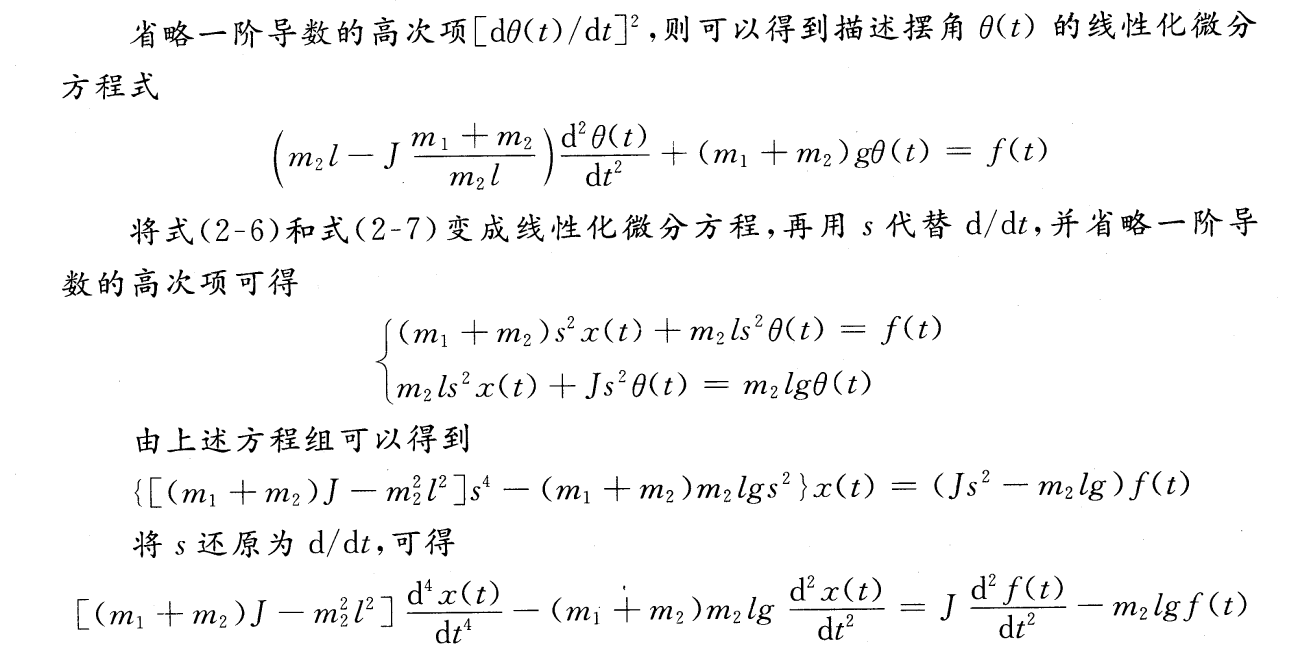


12、

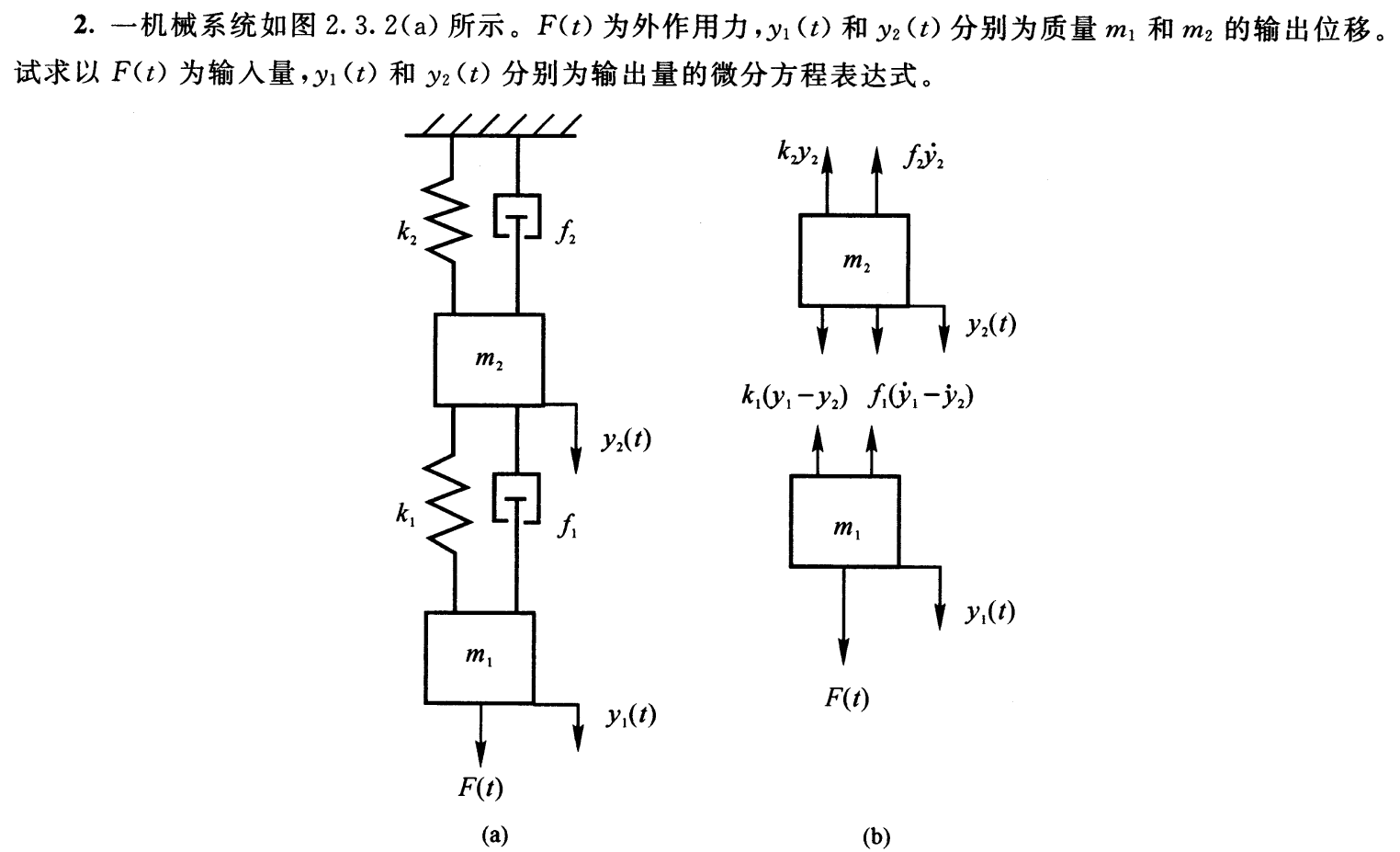


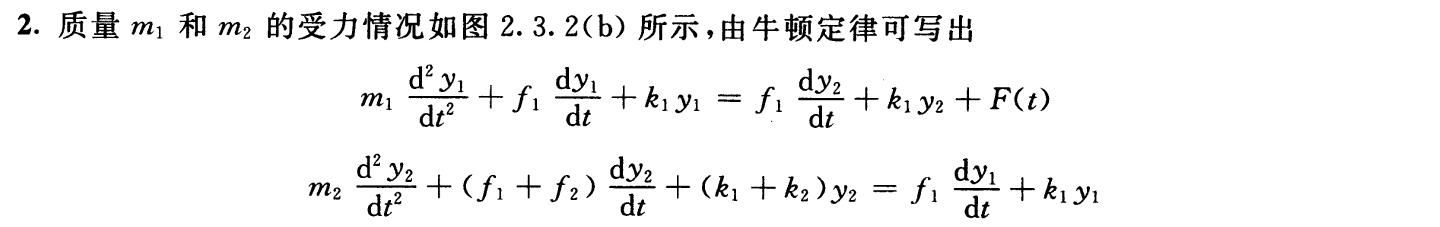




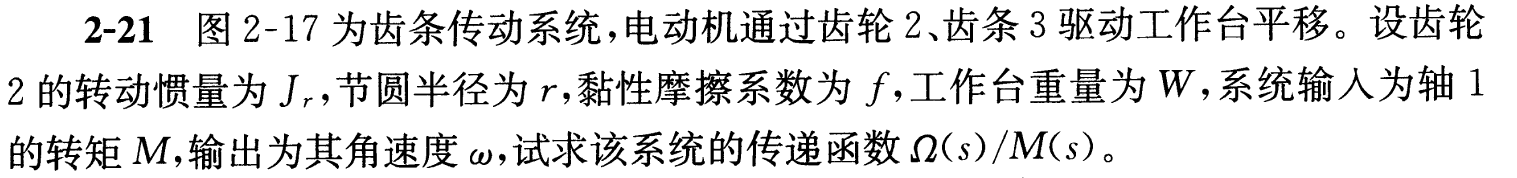


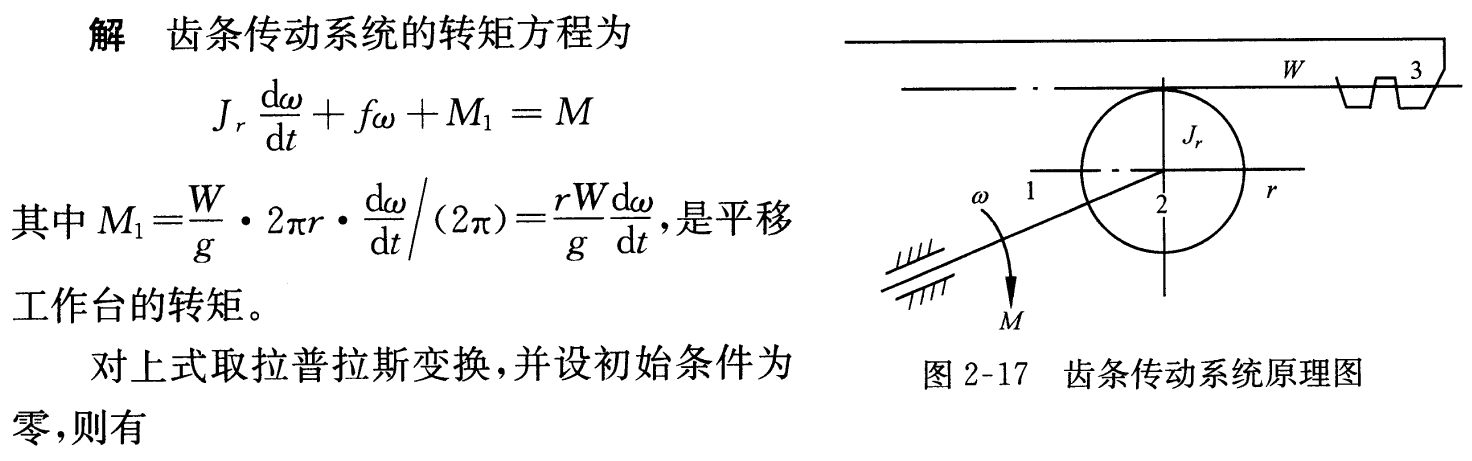
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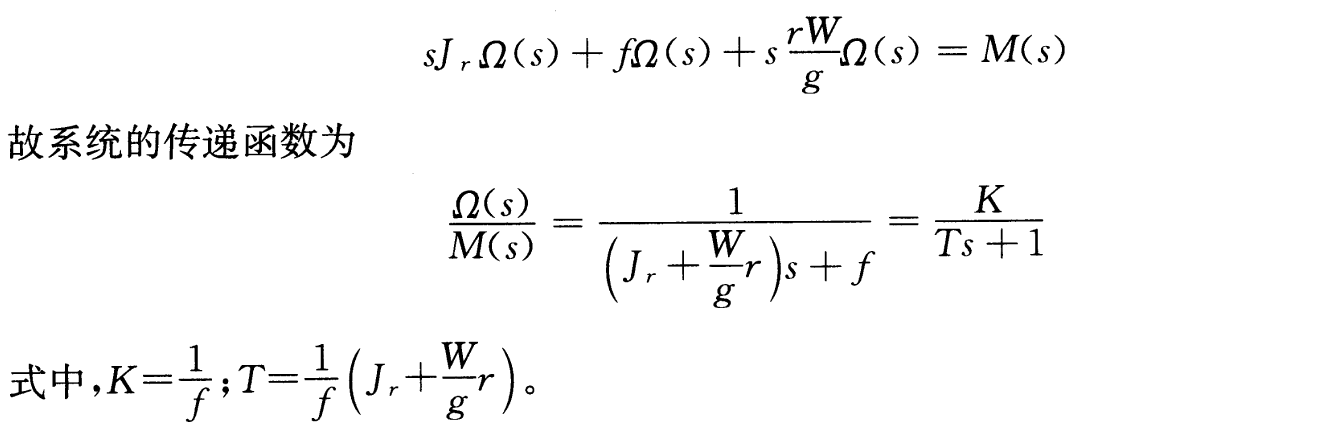
解：



14、

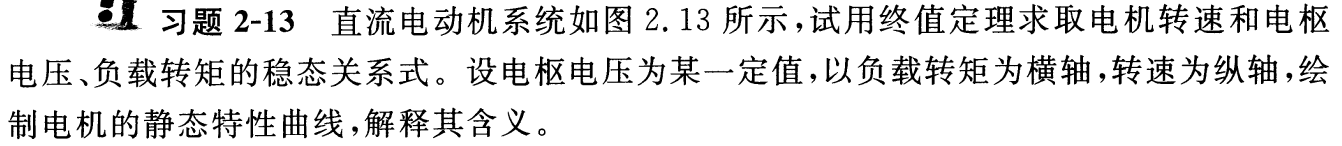


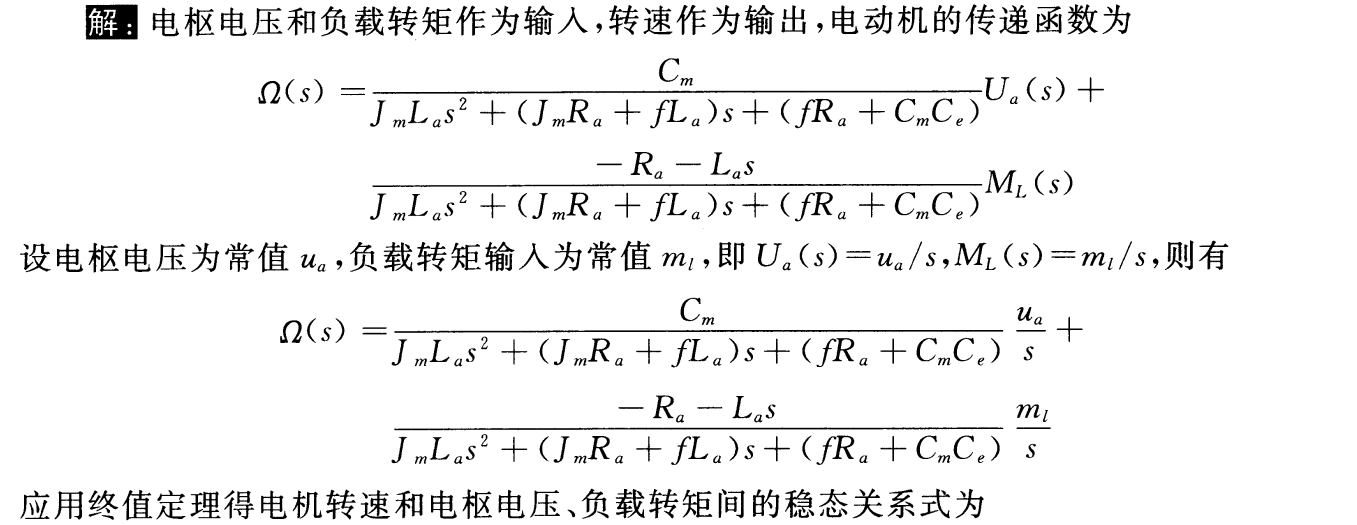


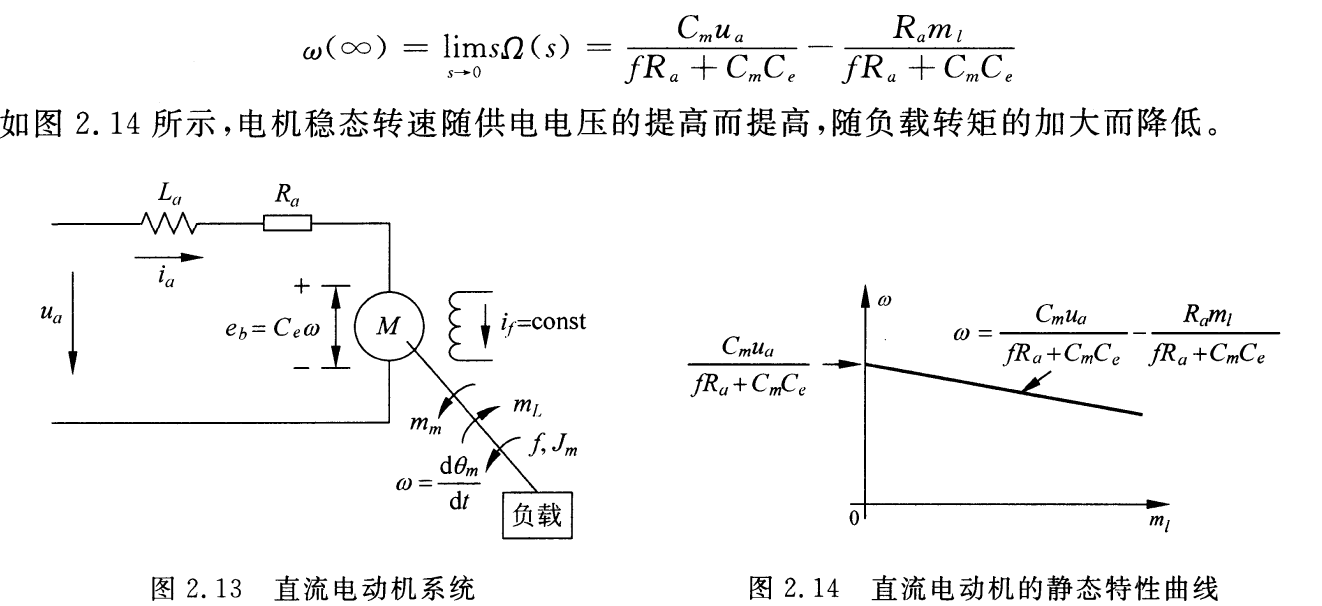


**三.由机电系统进行系统建模**

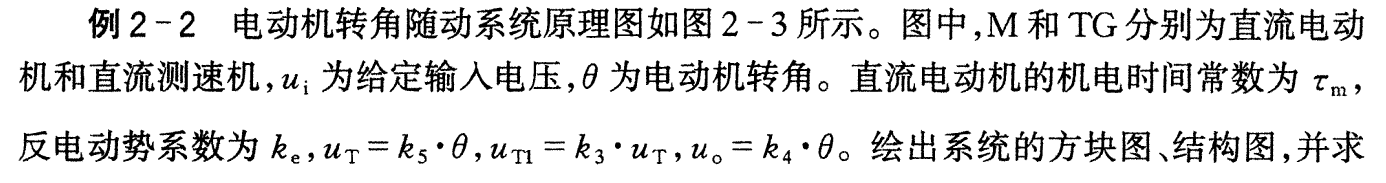
1、

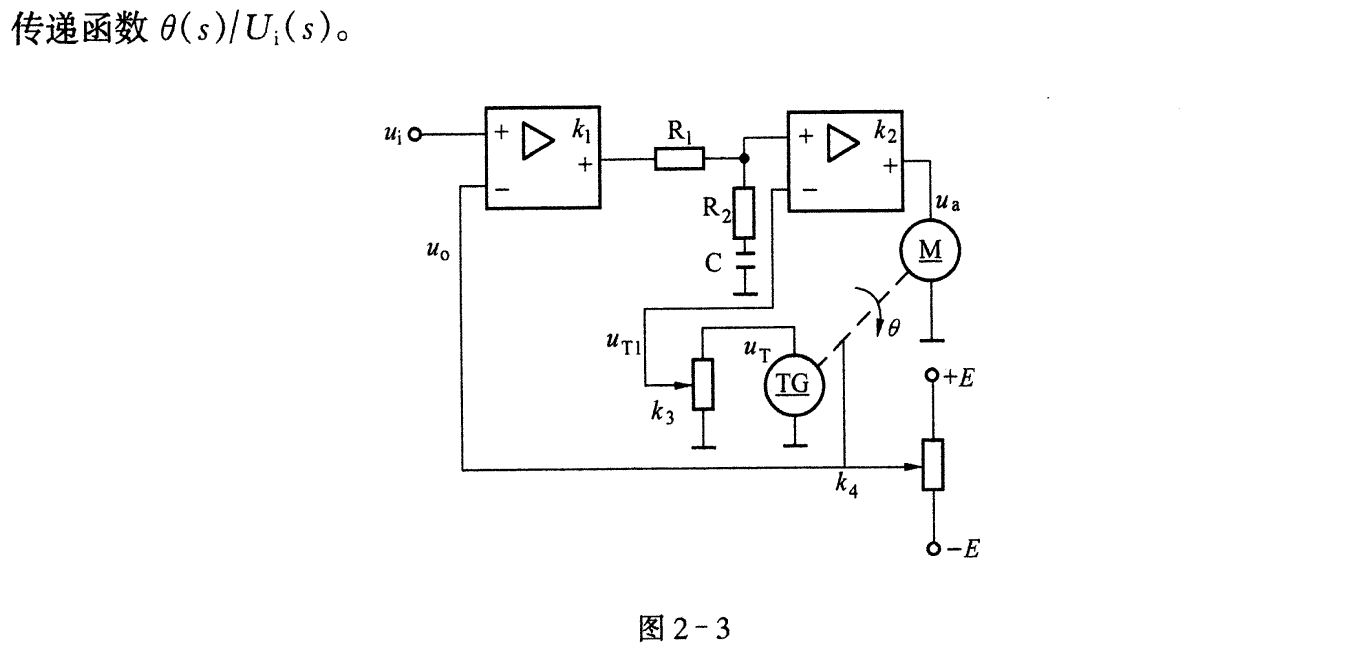




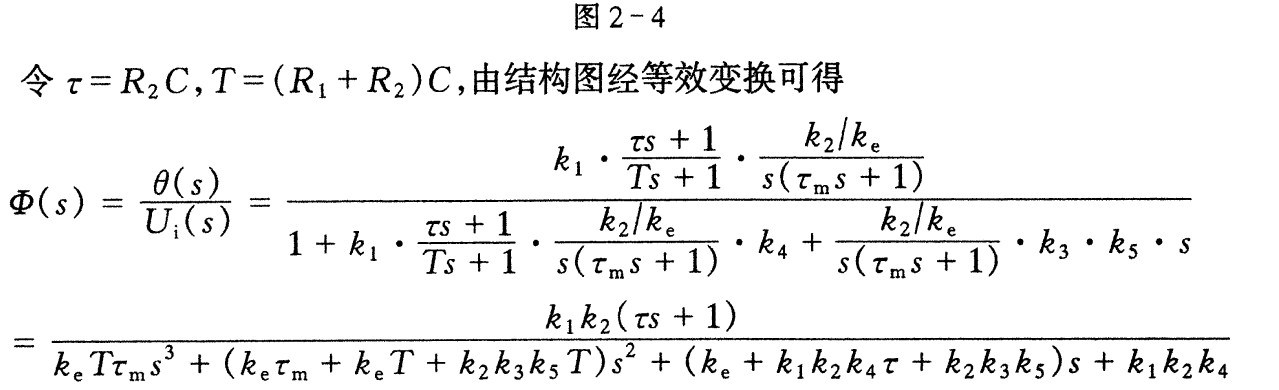


2、



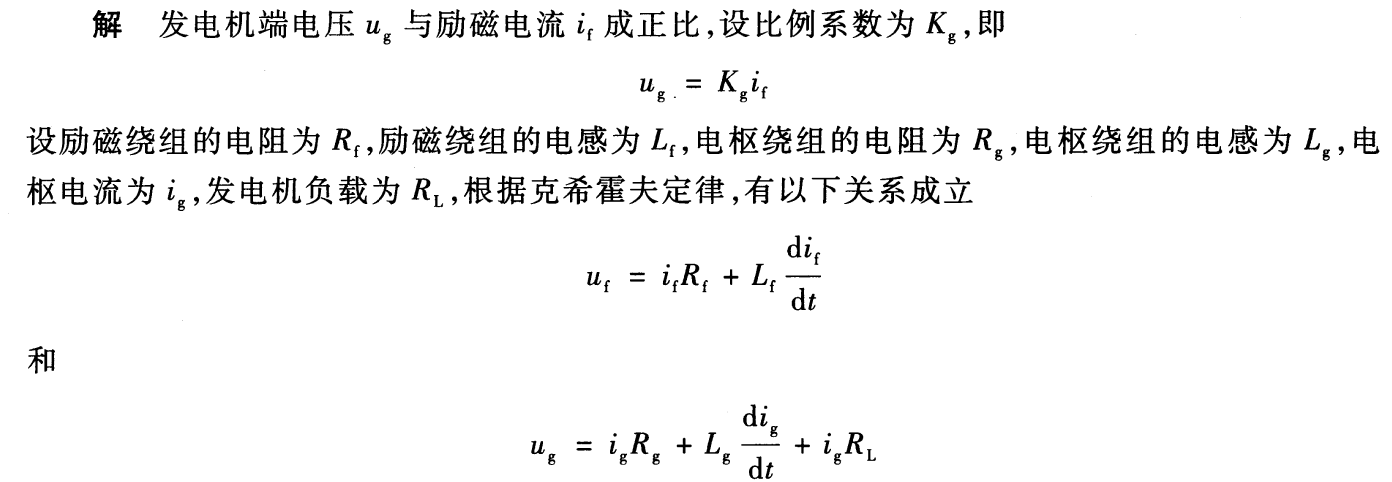


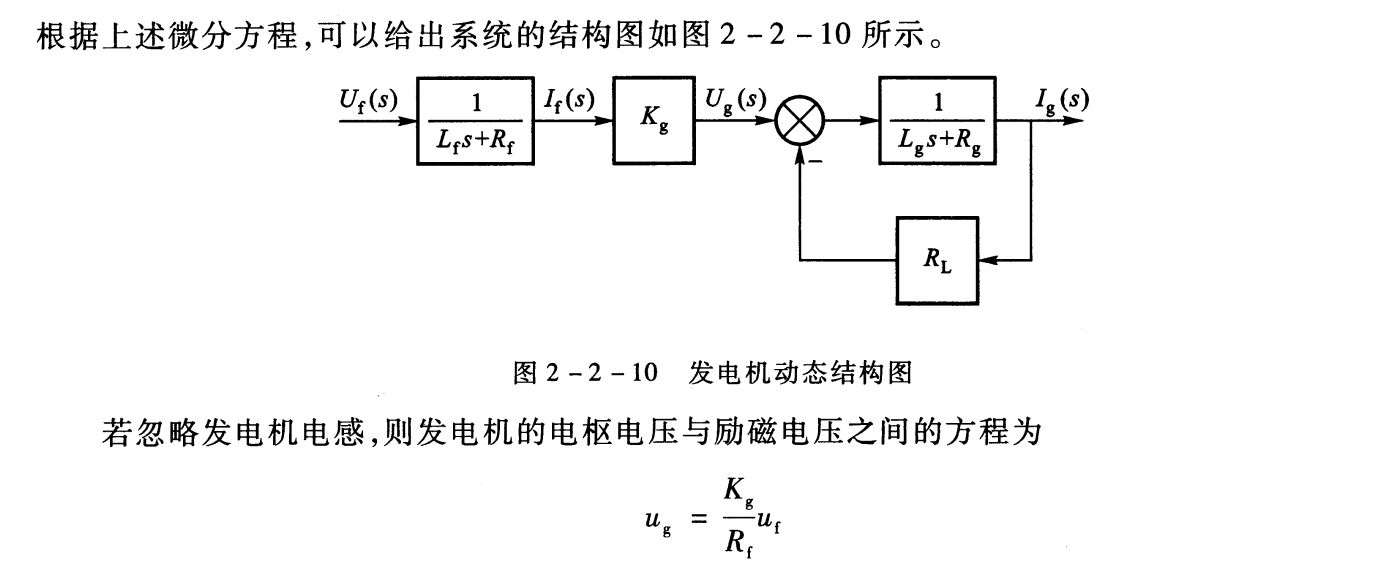




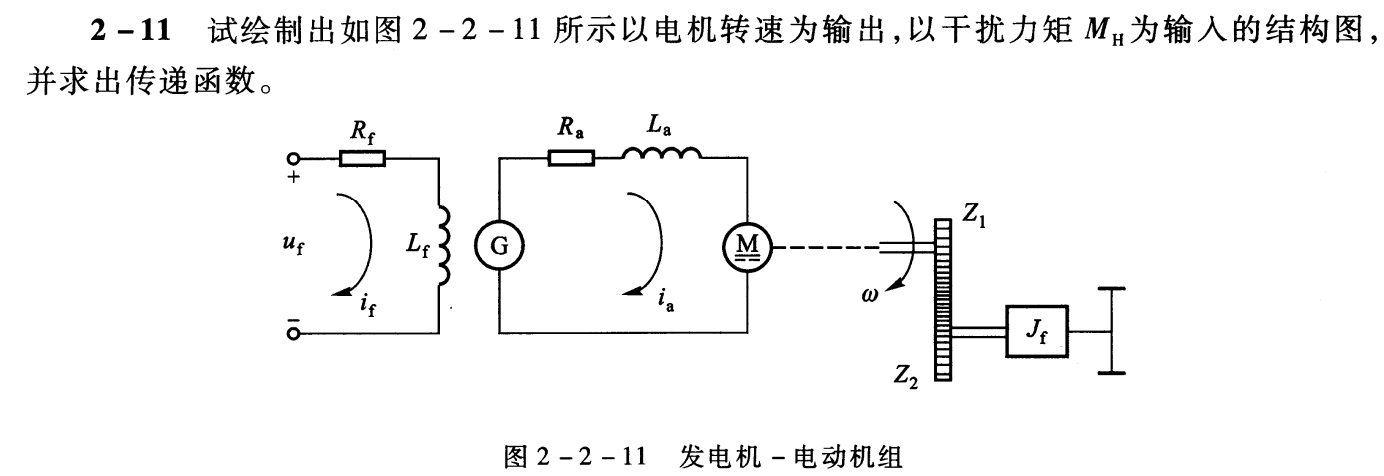
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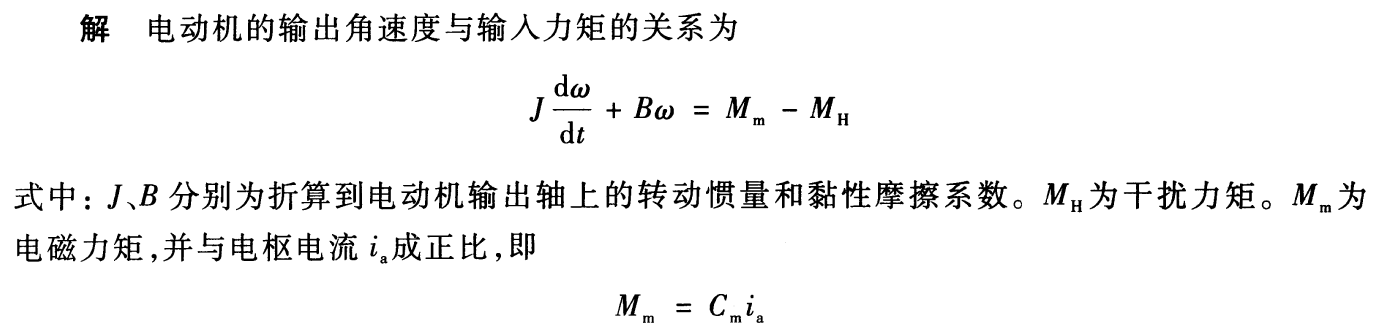


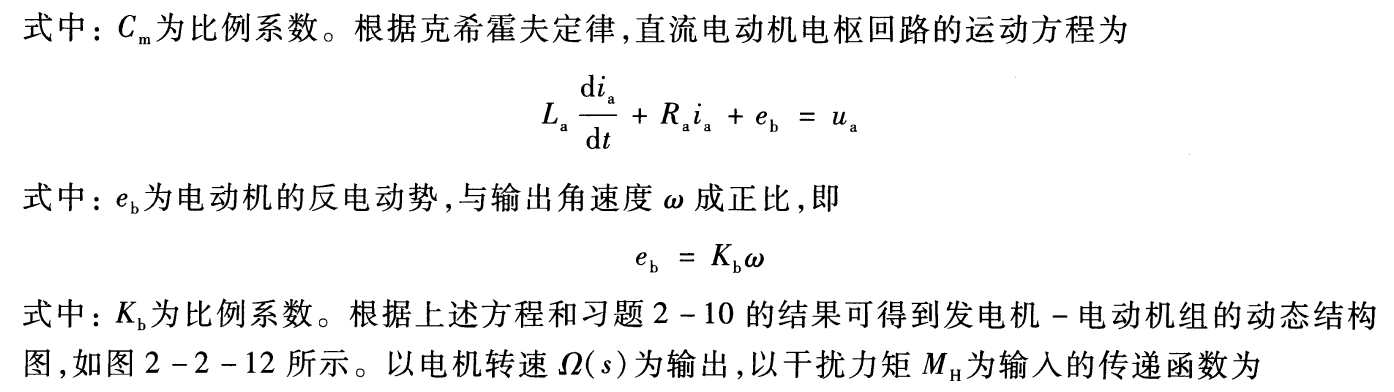


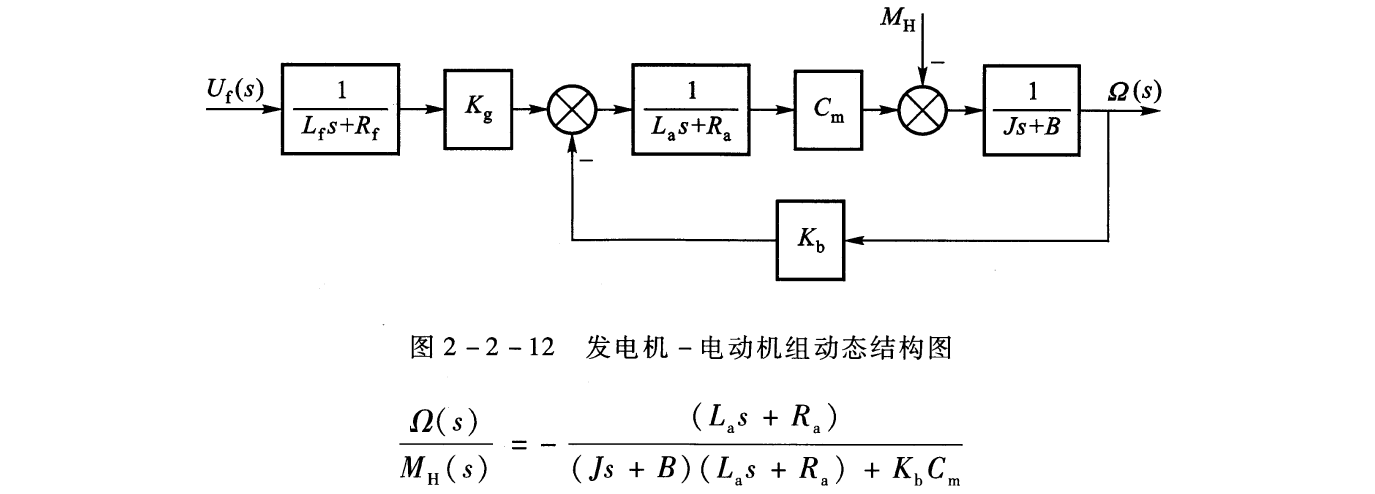


4、

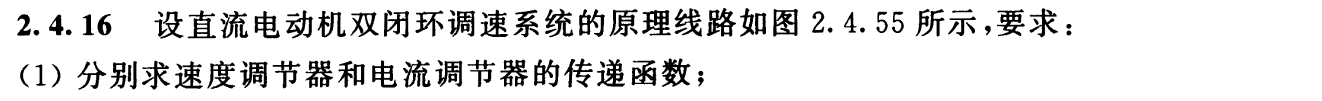


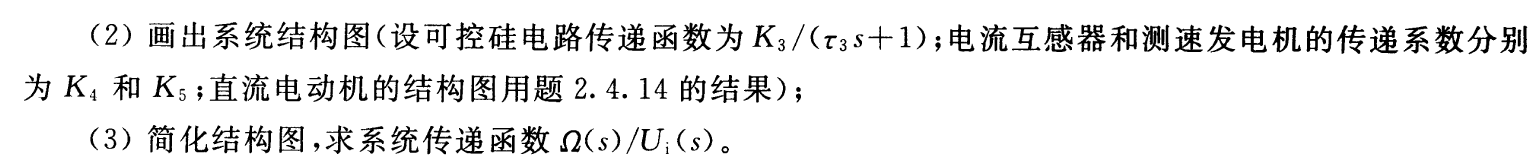


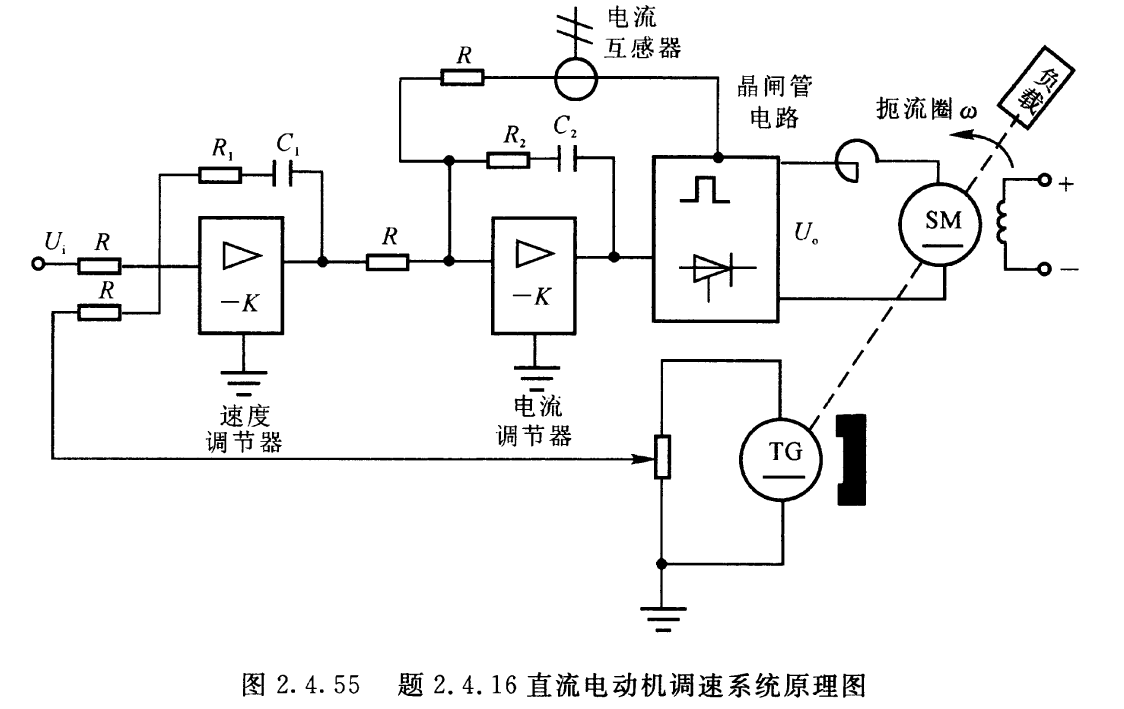


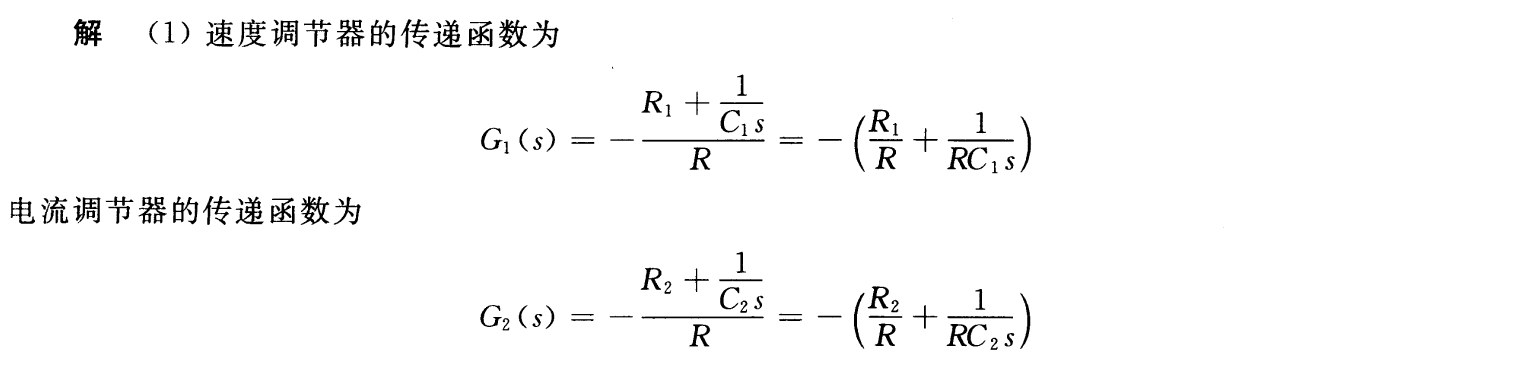


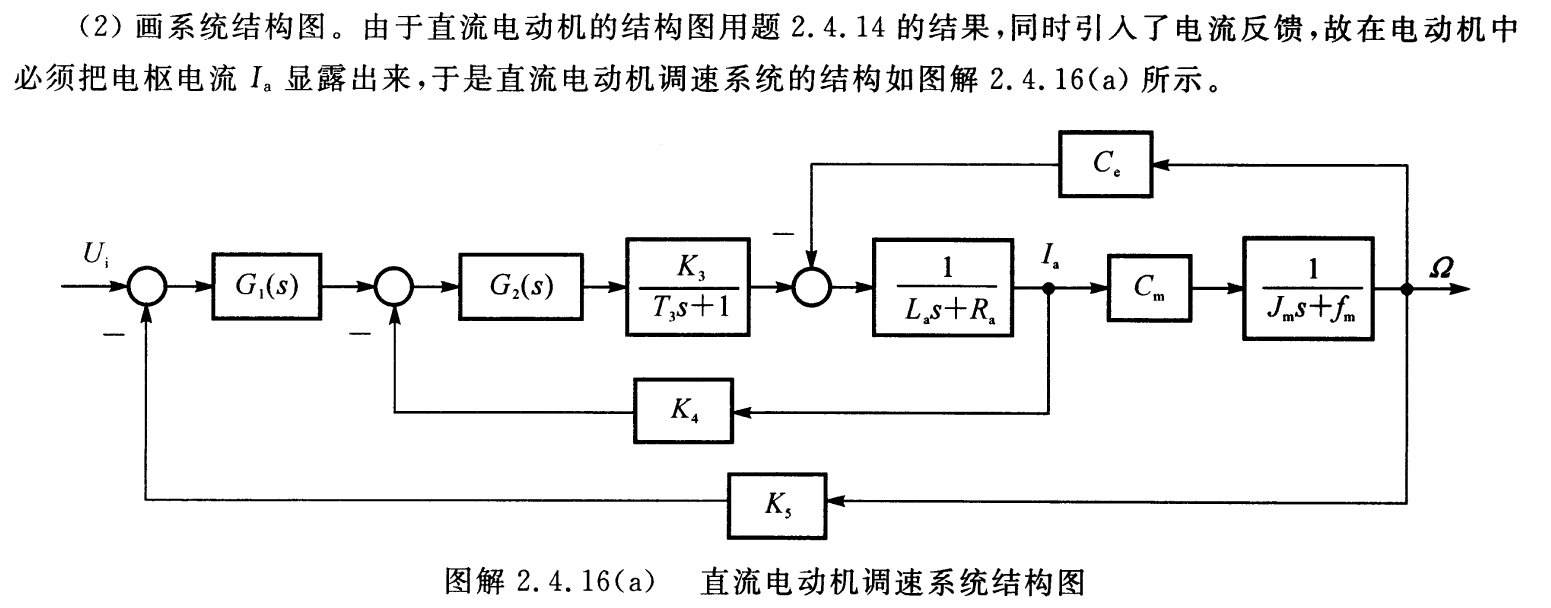
5、

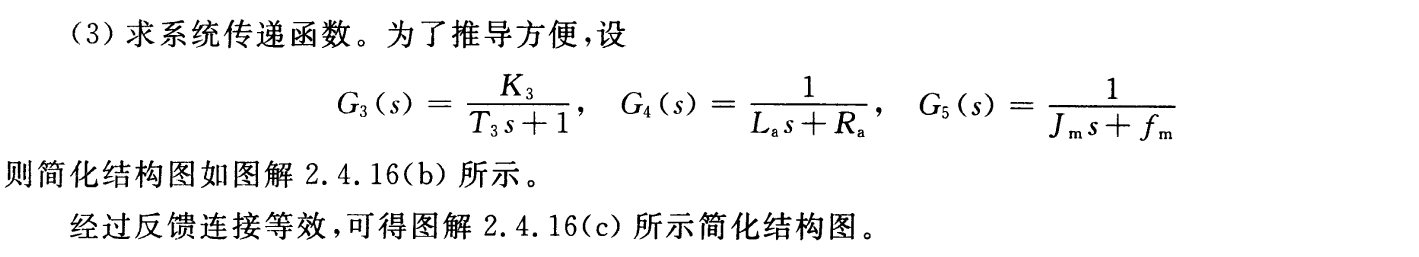


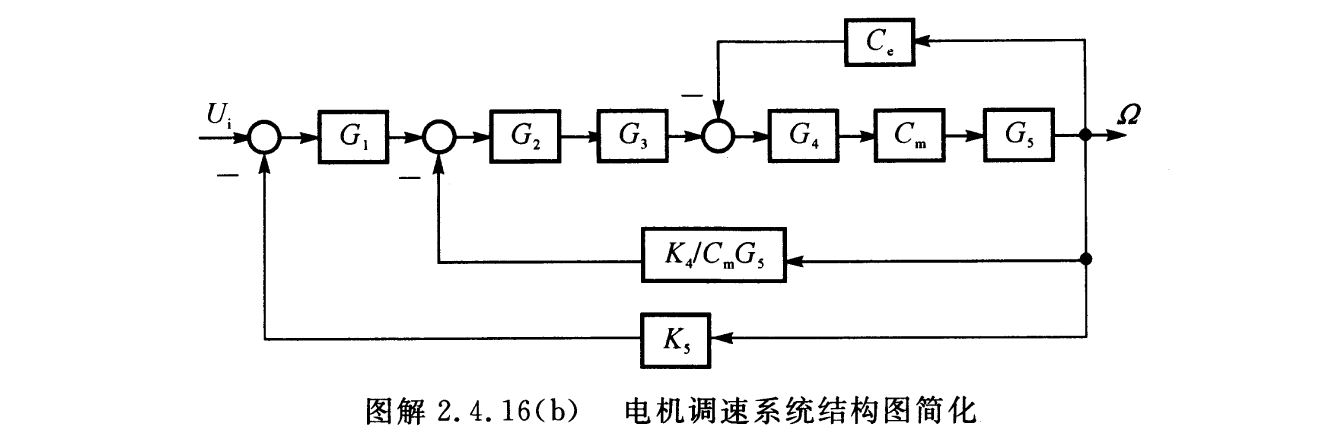


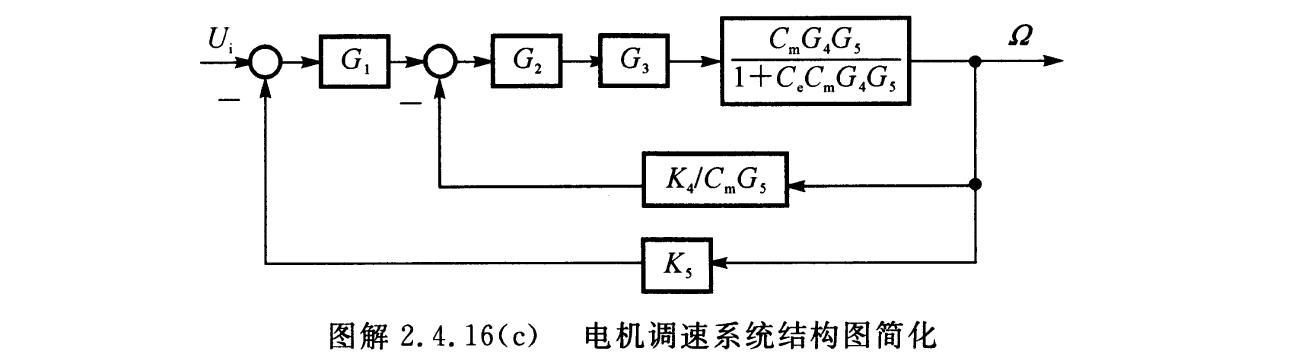


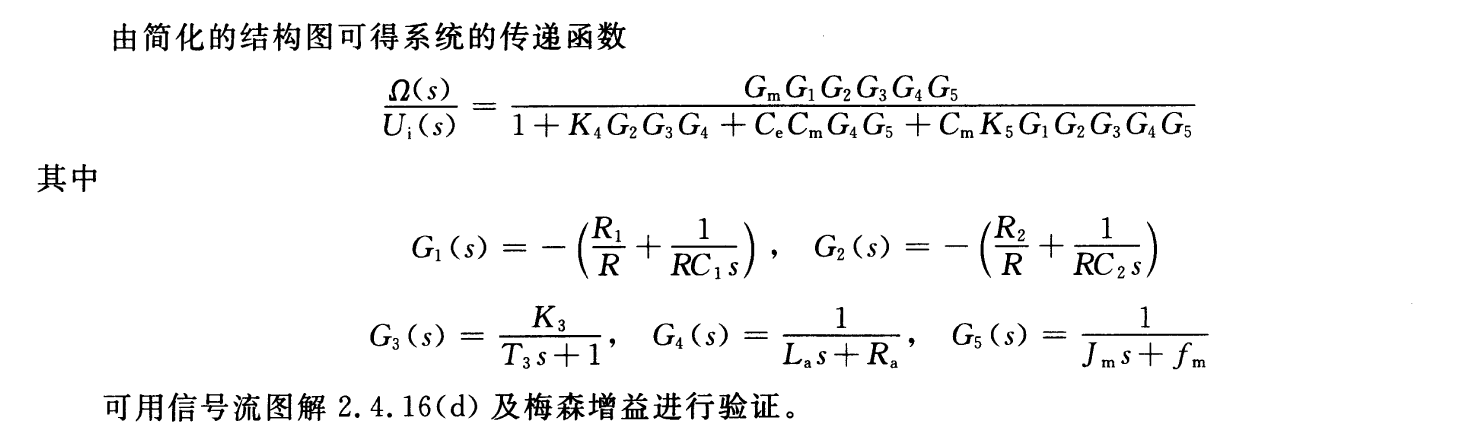


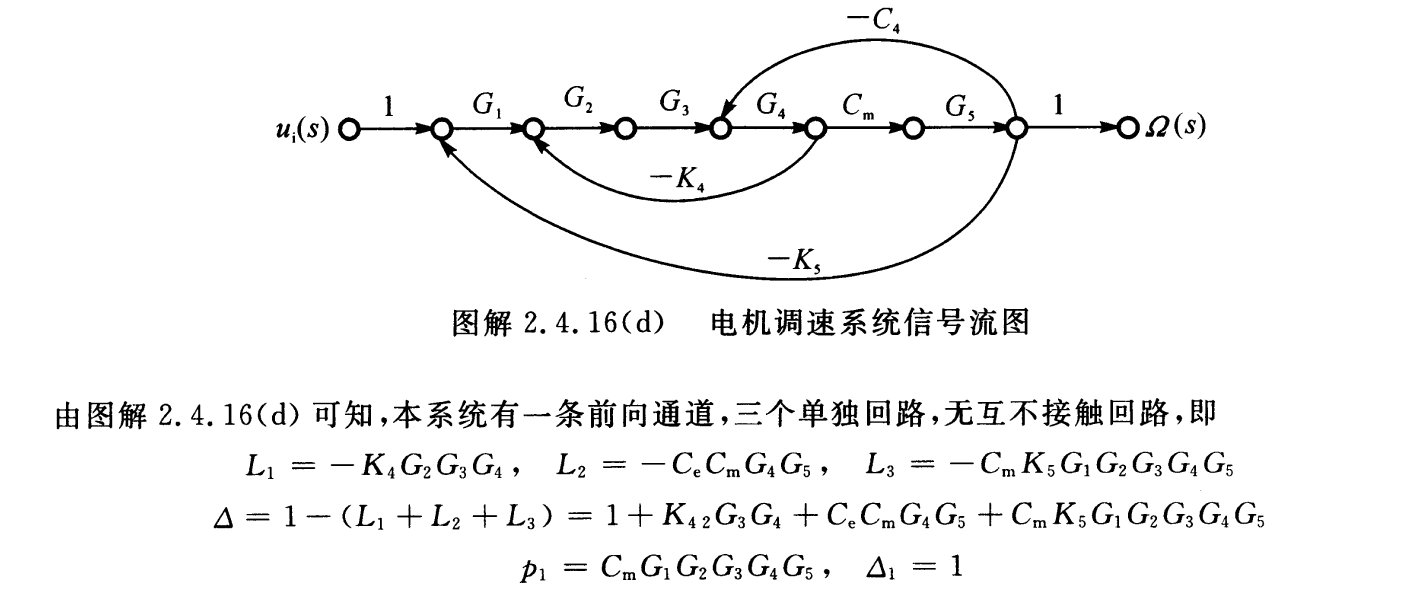


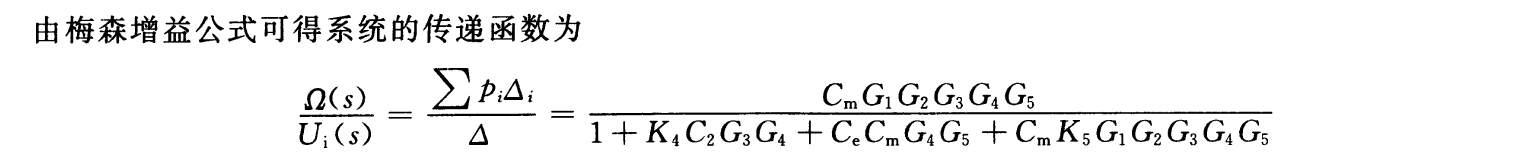




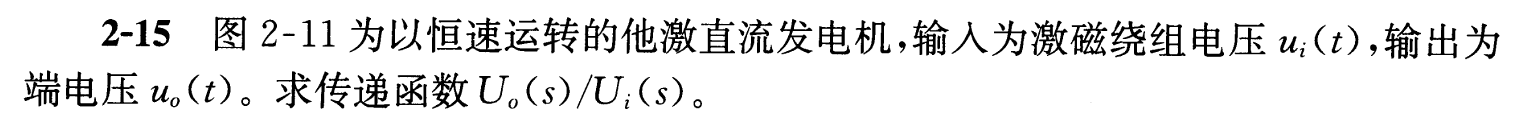


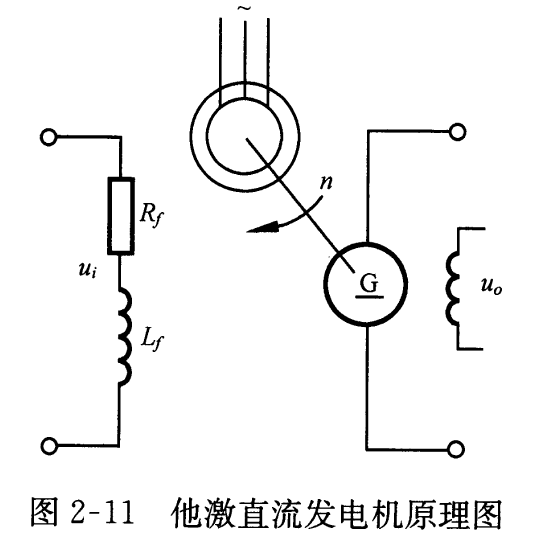


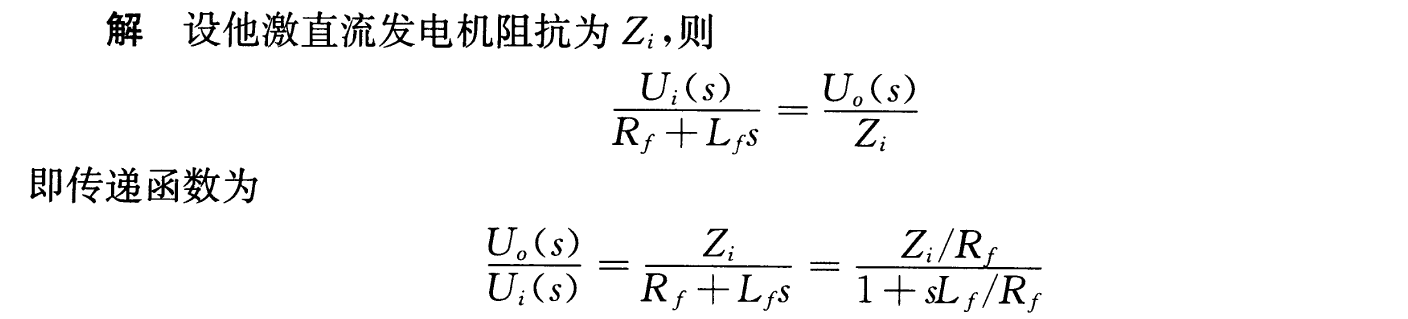




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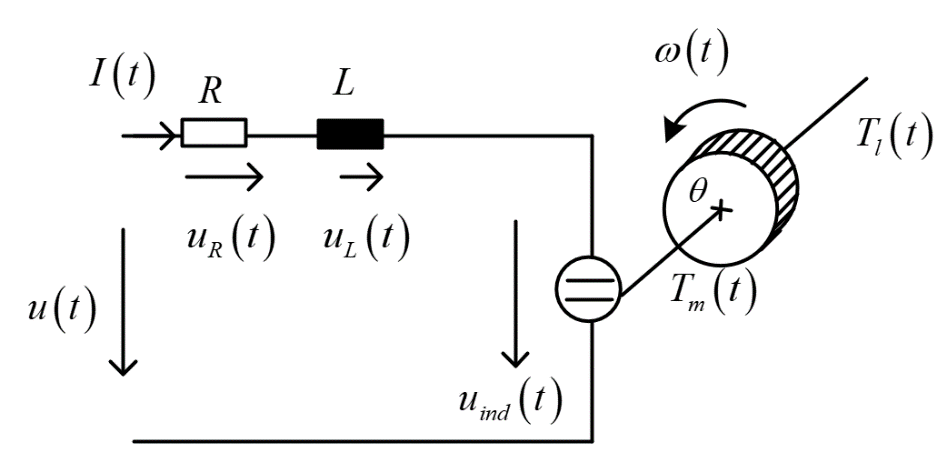


7、

图1位所示直流电机简化原理图。图中，为电枢电流，为电枢电压，为电枢电路电阻，为电枢电感，为电机转速，为电枢反电势。为电动机和负载折合到电动机轴上的转动惯量，为负载扭矩，为电磁扭矩。假设电机转动有摩擦力，为粘性摩擦系数。电枢反电势满足，其中反电势系数电磁扭矩满足，其中电机转矩系数。

1）以电枢电压为输入，电机转速为输出，建立图1所示直流电机状态微分程模型。

2）当电机空载时，建立传递函数模型



解（1）电枢电路方程为



由刚体转动定律可得



又，，

联立上述方程可得



（2）当空载时，由（1）可知



拉氏变换可得



