***Solution Section* 3.1 − Definition of the Laplace Transform**

***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***







 



***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

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***Solution***







***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***









***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***







 



***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

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| **+** |  |  |

***Solution***

















***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***



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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





 



***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





 



***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of



***Solution***



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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***









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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***









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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***









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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***





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***Exercise***

Use Definition of Laplace transform to find the Laplace transform of 

***Solution***

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***Exercise***

Use Definition of Laplace Transform to show the Laplace transform of  is 

***Solution***





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***Solution Section* 3.2 − Basic Properties of the Laplace Transform**

***Exercise***

Find the Laplace transform and defined the time domain of 

***Solution***









***Exercise***

Find the Laplace transform and defined the time domain of 

***Solution***











***Exercise***

Find the Laplace transform and defined the time domain of 

***Solution***









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Find the Laplace transform and defined the time domain of 

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Find the Laplace transform and defined the time domain of 

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 ***Using Derivative of a Laplace Transform Proposition***





 ***OR******Using Laplace Transform*** *table*

***Exercise***

Find the Laplace transform of 

***Solution***











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Find the Laplace transform of 

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Find the Laplace transform of 

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 ***Using Derivative of a Laplace Transform Proposition***





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 ***Using Derivative of a Laplace Transform Proposition***















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***Exercise***

Find the Laplace transform of 

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***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***

Let , then

*Left side*;







*Right side*; 

 ***Using Derivative of a Laplace Transform Proposition***









***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***

Let , then

*Left side*;







*Right side*; 

 ***Using Laplace Transform*** *table*







***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***



















***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***







Let , then











***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***







Let , then











***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***



Let , then













***Exercise***

Transform the initial value problem into an algebraic equation involving . Solve the resulting equation for the Laplace transform of *y*.



***Solution***





















***Solution Section* 3.3 − Inverse Laplace Transform**

***Exercise***

Find the inverse Laplace Transform of 

***Solution***

 *Factor*







***Exercise***

Find the inverse Laplace Transform of 

***Solution***





Thus, by linearity;





***Exercise***

Find the inverse Laplace Transform of 

***Solution***







***Exercise***

Find the inverse Laplace Transform of 

***Solution***





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Find the inverse Laplace Transform of 

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Find the inverse Laplace Transform of 

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/***Exercise***

Find the inverse Laplace Transform of 

***Solution***

Use partial fraction 













***Exercise***

Find the inverse Laplace Transform of 

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Find the inverse Laplace Transform of 

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