***Solution Section* 8.2 – Sum and Difference Formulas**

***Exercise***

Write the expression as a single trigonometric function 

***Solution***





***Exercise***

Show that 

***Solution***







***Exercise***

If with *A* in QII, and  with *B* in QIII, find

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

***Solution***

 

1. 







1. 







1. 



1. 







1. 







1. 



***Exercise***

If , and  , find

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|  |  |  |
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***Solution***

 

1. 







1. 







1. 



1. 







1. 







1. 



***Exercise***

If  , and  , find

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***Solution***

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***Exercise***

If , and  , find

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***Solution***

 

1. 







1. 







1.  
2. 







1. 







1.  

***Exercise***

If , and  , find

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***Solution***

 

1. 







1. 







1.  
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***Exercise***

If , and  , find

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***Solution***

 

1. 







1. 







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***Exercise***

If , and  , find

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***Solution***

 

1. 







1. 







1.  
2. 







1. 







1.  

***Exercise***

If , and  , find

|  |  |  |
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***Solution***

 

1. 







1. 







1.  
2. 







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1.  

***Exercise***

If with *A* in Q*I*, and  with *B* in Q*I*, find 

***Solution***



























***Exercise***

Prove the identity 

***Solution***







 ***√***

***Exercise***

Prove the identity 

***Solution***















 ***√***

***Exercise***

Prove the identity 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***







 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***







 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the identity 

***Solution***









 ***√***

***Exercise***

Prove the identity 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***



 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***

 

 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***













 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***











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***Exercise***

Prove the following equation is an identity: 

***Solution***

 

 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





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***Exercise***

Prove the following equation is an identity: 

***Solution***













 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***











 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***













 ***√***

***Exercise***

Prove the following equation is an identity: 

***Solution***





 ***√***

***Exercise***

Common household current is called ***alternating current*** because the current alternates direction within the wires. The voltage *V* in a typical 115-*volt* outlet can be expressed by the function  where *ω* is the angular speed (in *radians* per *second*) of the rotating generator at the electrical plant, and *t* is time measured in seconds.

1. It is essential for electric generators to rotate at precisely 60 cycles per second so household appliances and computers will function properly. Determine *ω* for these electric generators.
2. Determine a value of *φ* so that the graph of  is the same as the graph of 

***Solution***

1. 



1. 





