**EXAMPLE 4:** Prove the following identities 

Sol

 L.H.S 

 

  R.H.S

**EXAMPLE 5:** Prove that 

Sol:

 

 

**EXAMPLE 6:** Prove that 

Sol:

 

 

 

 

**EXAMPLE 7:** Prove that 

Sol:

 

 







***H.W* Ex 8:** Prove that

 





**EXAMPLE 9:** Use the addition formulas to derive the identity

1. 
2. 
3. 
4. 
5. 



1. 



1. 



1. 



**EXAMPLE 10:** Solve the following equation 

Sol:

 











OR 

 

 

 

**EXAMPLE 11:** Solve the following equation 

Sol:

 

 

 

 

 















**EXAMPLE 12:** Solve the following equation 

Sol:

 

 

either 

or 

 

**EXAMPLE 13:** Solve the following equation 

Sol:





either 

or 







**EXAMPLE 14:** Solve the following equation 

Sol:

 

 

 

either 





or 

  يهمل 

 

**EXAMPLE 15:** Solve the following equation 

Sol:

 







either 

or 









**EXAMPLE 16:** Solve the following equation 

Sol:

 

 

 

 

 

 

 

 

 

 

 

**EXAMPLE 17:** If find , , , , 

Sol

  

  

 



**EXAMPLE 18:** If , find 

Sol

 

 





**EXAMPLE 19:** If find without using calculator. Find, 

Sol:

 

 

 