**Practice Sheet 2**

1. Evaluate the following limits:

(i) (ii) (iii) .



2. If, prove that provided .



3. Let, while . Is continuousat?



4. Find all points of discontinuity for the function.



5. Using the definitions, find the derivative of each function at the indicated points

(i)



(ii)



6. Evaluate the following limits using L’ Hôpital’s rule

(i) (ii)



7. Determine which of the following functions are harmonic. For each harmonic function find the conjugate harmonic function and express as an analytic function of

| i) | ii) |
| --- | --- |
| iii) |  |
|  |  |