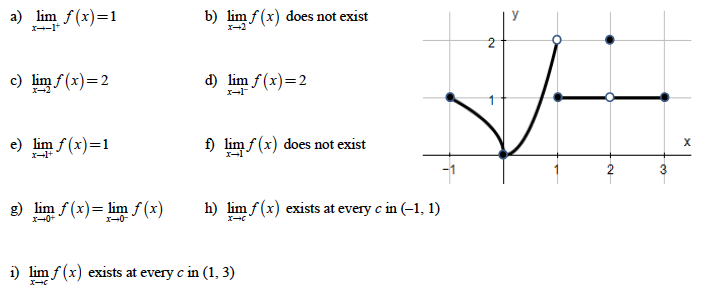
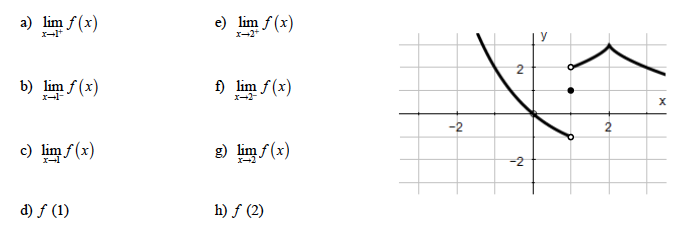
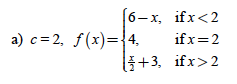
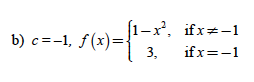
**2.1 – Worksheet – Day 1**

*All work must be shown and justified in this course for full credit. Insupported answers may receive NO credit.*

1. The only way to guarantee the existence of a limit is to algebraically prove it. Describe the different ways you can investigate the existence of a limit.
2. Using words, explain what is meant by the expression .
3. Assume and . Determine:  
     
   a) b)   
     
     
   c) d)
4. When asked to evaluate the limit of a function, what should be done first?
5. Evaluate the following limits by using direct substitution.  
     
   a) b)   
     
     
     
   c) d)   
     
     
     
   e) f)
6. Explain why you cannot use direct substitution to determine each of the following limits.  
     
   a) b) c)
7. If a limit does not exist, there are 3 possible reasons why. List them all three.
8. Find each limit or explain why the limit does not exist.  
     
   a) , if b) , if   
     
     
     
     
   c) d)
9. Determine whether each statement about the graph below is True or False.  
     
   
10. Use the graph of *f*(*x*) to estimate the limits and value of the function, or explain why the limit does not exist.  
      
    
11. For each of the following functions, (i) draw the graph, (ii) determine and , and (iii) explain what the value of is or explain why it doesn’t exist.  
      
      
      
      
      
      
      
      
      
    
12. 