Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the limit L. Then use the ε-δ definition of a limit to prove that the limit is L.

1.

For #2-10, determine the limit using the graph of f(x) below.

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2. =

3. =

4. =

5. f(-2)=

6. =

7. 

8. f(4)=

9. =

10. 

11. Sketch a function that fits the following characteristics:

* 

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* 
* f(-2)=-1
* =2
* f(1)=0

Find the intervals where f(x) is continuous. Explain the type and location of any discontinuities. Show all work and explanations.

12. 

13.

14.

15. 

For #16-29, Find the limit (if it exists). State infinite limits as such (±∞). Show all work.

16. 

17. 

18. 

19. 

20. 

21. 

22. 

23. 

24. 

25. 

26. 

27. 

28.

29. 

30. Explain the Intermediate Value Theorem and state how it could be solved to help find solutions (roots) to an equation. Draw a picture to help explain your answer.