1. Is differentiable at ? Justify your answer.
2. Which is greater: the average rate of change of on or the instantaneous rate of change of at ? Explain.
3. Let . Find .
4. Let . Find .
5. Use a right Riemann sum with the three subintervals indicated by the table to estimate .
6. Write the equation of the line tangent to the graph of at .
7. At which x-value(s) does the graph of have horizontal tangent lines?
8. Find .
9. Let . Find .
10. Find .
11. Find and write a sentence interpreting its meaning.
12. Are we guaranteed a value *c* for such that ? Explain.
13. Does have a relative maximum, minimum, or neither at ? Justify your answer.
14. Find .
15. Give two x-values where the graph of is above the x-axis and is decreasing at an increasing rate.
16. Let be a function such that . At which x-values does the graph of have a point of inflection? Explain.
17. Let .Find .
18. Let . Find .
19. For find .
20. Would the line tangent to the graph of at give an under- or over-approximation for ? Explain.
21. Find .
22. Let . Find .