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| Test 1 – Version EDusty Wilson Math 151 No work = no credit  No Symbolic Calculators | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *I know not what I appear to the world, but to myself I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell, whilest the great ocean of truth lay all undiscovered before me.*  Isaac Newton (1643 - 1727)  English mathematician |

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| Warm-ups (1 pt each): | =\_\_\_\_\_ | =\_\_\_\_\_ | =\_\_\_\_\_ |

(1 pt) Paraphrase the quote by Isaac Newton (above).

(5 pts) If  and the average rate of change of *f*  from  to  is 3, what is ?

(4 pts) Consider the graph of *f* (right).

|  |  |
| --- | --- |
| a.) Between which consecutive labeled points  is *f* ’ negative?    b.) Between which consecutive labeled points does the sign of *f* ’ change from negative to positive? |  |

(10 pts) Evaluate 

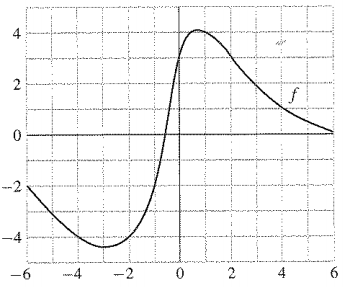
(10 pts) Use the graph of *g* to answer the questions below.

|  |  |
| --- | --- |
| 1. (2 pts) = \_\_\_\_\_ 2. (2 pts) Find= \_\_\_\_\_ 3. (2 pts) Find= \_\_\_\_\_ 4. (2 pts) Find = \_\_\_\_\_ 5. (2 pts) Is *g* continuous at ? Explain why or why not using the definition. |  |

(10 pts) Use the definition of the derivative to find the derivative of 

(5 pts) Use the precise definition of the limit to prove 

(6 pts) Consider the graph of *f*.



1. (2 pts) Is ? Justify your answer.
2. (4 pts) Rank , , , , and  in increasing order

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ |
| smallest |  |  |  | largest |

(5 pts) Evaluate 

(5 pts) State the Squeeze Theorem or the Intermediate Value Theorem (your choice)

(5 pts) Evaluate 

(6 pts) Suppose the position of an object moving horizontally after *t* seconds is given by the function  where the position is given in meters to the right of the origin.

1. Find and interpret 

1. Use the definition of the derivative to find 

1. Interpret  including units

|  |  |  |  |
| --- | --- | --- | --- |
| Test 1 – Version QDusty Wilson Math 151 No work = no credit  No Symbolic Calculators | | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *I know not what I appear to the world, but to myself I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell, whilest the great ocean of truth lay all undiscovered before me.*  Isaac Newton (1643 - 1727)  English mathematician | |
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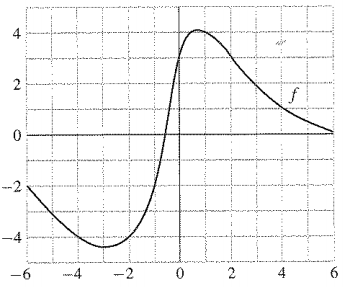
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(6 pts) Consider the graph of *f*.



1. (2 pts) Is ? Justify your answer.
2. (4 pts) Rank , , , , and  in decreasing order

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ |
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