

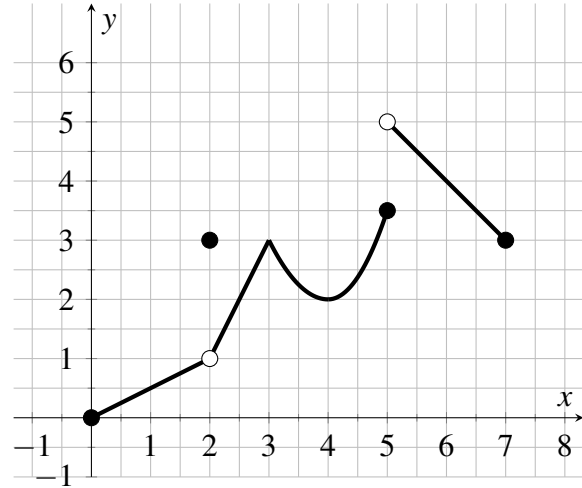
Name: _____

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Circle one: Rhodes (F01) | Bueller (F02)

25 points possible. No aids (book, calculator, etc.) are permitted. You need not simplify, but show all work and use proper notation for full credit.

1. [4 points] Use the graph to state all the absolute and local maximum and minimum values of the function.



2. [7 points] Find the absolute maximum and absolute minimum values of f on the given interval.

$$f(x) = 2x^3 - 24x - 1, \quad [0, 3]$$

3. [6 points] Find the critical numbers (critical points) of the function.

$$g(t) = t^2 e^{-5t}$$

4. [8 points] Suppose f is continuous on $[0, 4]$ and has a derivative at each point in $(0, 4)$. Suppose $f(0) = -1$ and $f(4) = 5$.

- a. What specifically does the Mean Value Theorem let you conclude?
- b. Draw a diagram that illustrates the Mean Value Theorem for this problem. Your illustration should include a tangent line somewhere.

