

# Mean Value Theorem

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**Solutions should show all of your work, not just a single final answer.**

1. Find every number  $c$  that satisfies the conclusion of the Mean Value Theorem for the function  $f(x) = x^3 - 4x^2 - 5$  on the interval  $[1, 2]$ .
2. T/F (with justification) The function  $1 - \frac{1}{x^4}$  satisfies the hypotheses of Rolle's Theorem on the interval  $[-1, 1]$ .
3. T/F (with justification) The graph of the semicircle on  $[-1, 1]$  below fits the hypotheses of the Mean Value Theorem.

