Math 2215 - Calculus 1

Exam #3 - 2016.10.10

Name: _____

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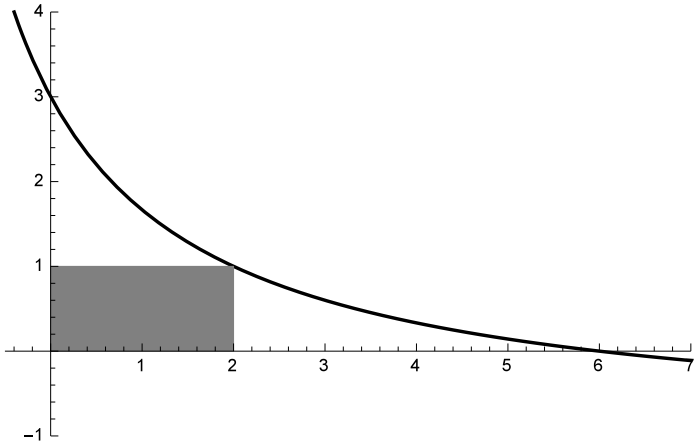
1. Approximate $(1.15)^{5/3}$.

2. Find the area of the largest rectangle which can be inscribed in the region bounded by the curve $y = \dfrac{6-x}{2+x}$ and the coordinate axis.



3. Find the intervals of increase and decrease, and classify all critical points for the function $f(x) = 2\sin(x) - \cos^2(x)$ on the interval $[0, 2\pi]$.

4. Sketch the graph of the function $f(x) = \dfrac{x}{x^2+1}$. In doing so, compute all asymptotes, intercepts, the first derivative, critical points, intervals of increase and decrease, the second derivative, intervals of concavity, inflection points, local max and mins, as well as global max and mins.