MATH 2250 Calculus I
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Name:
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Practice Quiz No. 7

Show all of your work, label your answers clearly, and do not use a calculator.

Problem 1 Sketch the graph of the function $f(x) = x^3 - 3x + 3$, making sure to have the correct intervals where the function is increasing/decreasing; the correct intervals where the function is concave up/down; the correct y-values at critical points, inflection points, and at $x = 0$; the correct asymptotes; and the correct x-intercepts (if you can solve for them).

Problem 2 Sketch the graph of the function $f(x) = \frac{x^2-x+1}{x-1}$, making sure to have the correct intervals where the function is increasing/decreasing; the correct intervals where the function is concave up/down; the correct y-values at critical points, inflection points, and at $x = 0$; the correct asymptotes; and the correct x-intercepts (if you can solve for them).

Problem 3 Sketch the graph of the function $f(x) = e^{2/x}$, making sure to have the correct intervals where the function is increasing/decreasing; the correct intervals where the function is concave up/down; the correct y-values at critical points, inflection points, and at $x = 0$; the correct asymptotes; and the correct x-intercepts (if you can solve for them).

Problem 4 Sketch the graph of the function $f(x) = x^5 - 5x^4$, making sure to have the correct intervals where the function is increasing/decreasing; the correct intervals where the function is concave up/down; the correct y-values at critical points, inflection points, and at $x = 0$; the correct asymptotes; and the correct x-intercepts (if you can solve for them).