MAT 201 Test 3, Fall, 2019 Name_____
30 Points Covers Chapter 3

You know the drill. Circle final answers. Show all work, etc.

1. (10 pts) Sketch the graph of $f(x)=16x^3-24x^2-63x+98$. Show all intercepts, asymptotes, extremes and inflection points.

2. (10 pts) Sketch the graph of $R(x)=\dfrac{x^2-x-6}{x+4}$. Show all intercepts, extremes, asymptotes and inflection points.

3. (10 pts) Sketch the graph of $g(x)=\sin(x)+\sqrt{3}\cos(x)+1$. Show all intercepts, extremes, asymptotes and inflection points.

4. Bonus (5 pts) Find the local extremes and inflection point for $T(x)=\dfrac{6x^3-29x^2-20x+75}{x^2+x-12}$. Doing this by hand is *hard*. If you use technology, explain what you used, and how.

5. Bonus (5 pts) Use a spreadsheet and a seed value of $x = 1$ to find one of the solutions of $e^{x-\frac{3}{2}}=3x-2$ using Newton's Method. Then find the other one. Send me your spreadsheet as an attachment. Provide a hand sketch of what we're looking at.