QUIZ 10 - MATH 111 — Friday, November 22

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Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [4 points] Either expand or contract, as needed, (showing clearly all applications of rules involved) the following expressions.

   (a) $\log\left(\dfrac{x^2(3x+5)}{\sqrt[3]{y}}\right) =$

   (b) $7\ln x - \dfrac{1}{3}\ln(y+1) + 2\ln(z+3) =$

2. [8 points] Solve the following equations by hand (no decimals).

(a) $7e^{3x+1} - 9 = 19$

(b) $5\log_3(2x + 7) + 22 = 42$

(c) $\log_2(x + 5) - 3 = \log_2(x - 1)$