MATH 161: THE INSIDER'S VIEW OF QUIZ X

1. Area between two curves: for example, $y = x^2 + 3x$ and $y = 2x - x^2 + 1$.

2. FTC (version 2): Let $F(x) = x + \int_5^{\ln x} t^2\, e^t dt$. $Find\ F'(x)\ and\ F''(x)$.

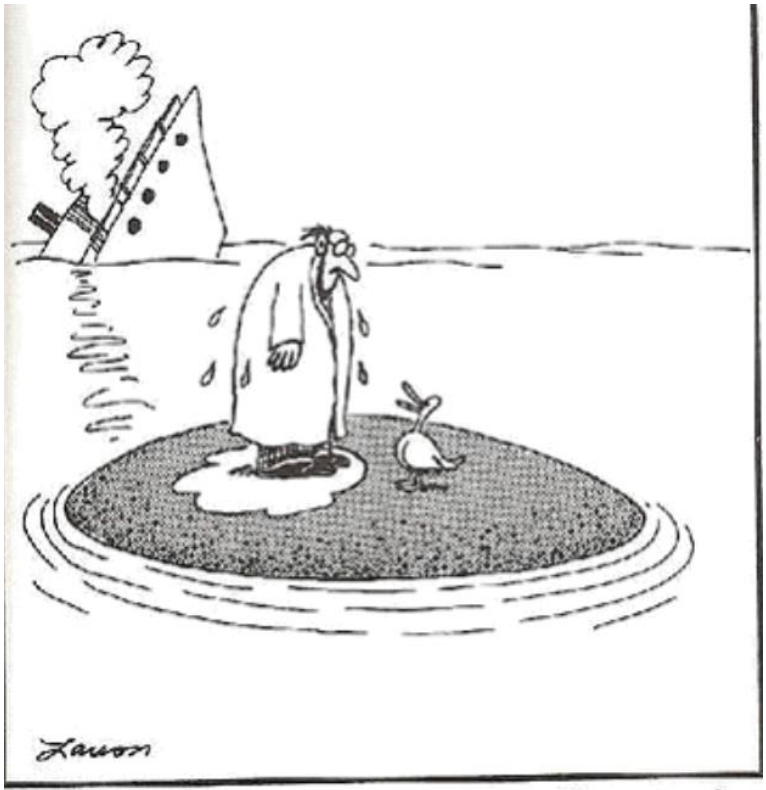
3. Hyperbolic identity: For example, show, using only algebra, that

$$\sinh(2x) = 2\cosh x \sinh x.$$

4. Find the area beneath a curve, using the FTC (main version). For example, find the area beneath the curve $f(x) = e^x\sqrt{1+e^x}$ $that\ is\ above\ the\ interval$ $[0, \ln 2]$.

5. Interpreting the Riemann integral, as we did for the "tree problem," (U.M.) #2, Nov 26 discussion sheet, viz. $\int_{13}^{17} C(t)dt = 0.05$

6. Extra Credit: Similar to: solve for f(x): $\int_0^{3x} f(t)\ dt = x^4 + xe^{\arctan x}$



"So, Professor Jenkins!... My old nemesis!... We meet again, but this time the advantage is mine! Ha! Ha! Ha!"