Homework #9 Name: _____

Math 131 Section: _____ Row: _____

This assignment is due by 11 am on April 13, 2007 You can turn it in to me in class or drop it by the office, **Blocker 640D**. Be sure that you follow the homework rules, they can be found on your syllabus. Please work the problems in the order that they are listed.

1. Find these integrals.
   (a) $\int (12x^2 + 10)(2x^3 + 5x + 5)^9 \, dx$
   (b) $\int \frac{8x^2}{\sqrt{x^3 + 2}} \, dx$
2. Find these integrals.
   (a) $\int (x^3 + 2)\cos(x^4 + 8x) \, dx$
   (b) $\int \frac{3e^{3x} - 2e^{-2x}}{e^{3x} + e^{-2x}} \, dx$
3. Compute the following.
   (a) $\int_0^A 4e^{2x} - 10\sin(2x) \, dx =$
   (b) $\int_B^5 \frac{7}{x} - \frac{2}{x^2} \, dx =$
4. Compute $\int_1^B x^2 e^{x^3+2} \, dx =$
5. If x is the number of years from 1990, then the population growth of a city, in millions per year, can be modeled by the formula $1.5e^{.25x}$. Find a formula that gives the population of the city A years after 1990, i.e. $P(A) =$.
6. Use the graph of $f'(x)$ and the following information to find the coordinates, (x, y), of the following. Assume that $f(0) = 20$ and that the areas for the three regions are as given: Region A = 132, Region B = 180 and Region C = 200.
   (a) local minimum(s) of $f(x)$
   (b) local maximum(s) of $f(x)$