Kerry Ojakian's MTH 32 Class

Class Assignment #4

General Instructions:

Work on your own and hand in your own work without copying from anyone or anything (though you of course may get help).

The Assignment

1. Integrate $\displaystyle\int \frac{3}{x^{3/2}}\,dx$
2. $\displaystyle\int \frac{8}{2x-3}\,dx$
3. Integrate $\displaystyle\int_{-1}^{1} x^9 \sin^2 x\,dx$ [Hint: No calulcation required ... think about it!]
4. $\displaystyle\int (\sec x)\sqrt{7-x^2}\,dx$
5. Start (but do not finish) the following integrals, meaning:
   - State the integration technique you will use (1- substition, 2- parts, 3- trig substitution, 4- partial fractions).
   - Carry out the technique so that the original integral is converted into a new integral problem which is significantly easier to solve.
   - Any algebraic expressions should be simplified and appropriate trig identities should be applied.
   - Stop here! Do **not** solve the new integral problem.

   (a) $\displaystyle\int \frac{1+x}{(x-5)(x+7)}\,dx$

   (b) $\displaystyle\int x^4 \sin(x^5)\,dx$

   (c) $\displaystyle\int \sin^5 x\,dx$

   (d) $\displaystyle\int (3x+5)\cos(x/4)\,dx$

   (e) $\displaystyle\int \frac{x^2}{\sqrt{7-x^2}}\,dx$