Name:

1. Evaluate the indefinite integral $\int \left(\sqrt{x} - \frac{1}{x}\right)^2 dx$.

2. Evaluate $\int \left[4^{-2x} + e^{-5x}\right] dx$.

3. Evaluate $\int \left(\frac{e^{\sqrt{2}} + x^{\sqrt{2}}}{\sqrt{x}}\right) dx$.

4. Evaluate $\int \left(\frac{1}{1+9x^2} \right) dx$.

5. Evaluate $\int \left(\frac{2}{3x} - \frac{1}{\sqrt{4-x^2}} \right) dx$.

6. Evaluate $\int \cot^2(5x) dx$ (HINT: use a trig formula relating $\cot^2 x$ to $\csc^2 x$.)