Math 181 – Fall 2011 Name: _____

First Hour Exam

(20 pts) **1.** Compute the indefinite integral $\int \cos^7 x \, dx$.

(20 pts) **2.** Find the volume of the solid obtained by rotating about the x–axis the region enclosed by the graphs of $y = x^2$ and $y = 6 - x$.

(20 pts) **3.** Compute the indefinite integral $\int x^3 \ln x dx$.

(20 pts) **4.** Compute the indefinite integral $\int \frac{dx}{x^2 + 3x + 2}$.

(20 pts) **5.** Find the area of the region enclosed by the curves $y^2 = x$ and $y = x - 2$.

Hand in this sheet along with your exam booklet!