Calculus II

Study Guide 14

Due Date: _____

Name: _____

Class: _____

Score: _____

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

1. (3 points) Evaluate: $\int x \sinh x \, dx$

1. _____

2. (4 points) Evaluate: $\int \dfrac{xe^{2x}}{(1+2x)^2} \, dx$

2. _____

3. (4 points) Evaluate: $\displaystyle\int_0^\pi \cos^2 x \, dx$

3. _____

4. (2 points) Evaluate: $\displaystyle\int_1^1 \cot x^2 \, dx$

4. _____

5. (8 points) Find the area of the region bounded by $y = x^2 e^{-x}$ and $y = x e^{-x}$. Drawing required.

5. _____

6. (6 points) Find the average value of $f(x) = x\sec^2 x$ on the interval $\left[0, \pi/4\right]$

6. _____

7. (5 points) Evaluate: $\displaystyle\int \sin^4 x \, dx$

7. _____

8. (5 points) Evaluate: $\displaystyle\int \tan^3 x \sec^5 x \, dx$

8. _____

Study Guide 14   Total Points: 50

9. (8 points) Find the volume generated by rotating the region bounded by $y = \sec x$, $y = \cos x$, $x = 0$ and $x = \pi/3$ by the $y = -1$. Drawing required.

9. _____

10. (5 points) Evaluate: $\displaystyle\int \frac{1}{\cos x - 1}\, dx$

10. _____