



Study Guide 1

MATH 172 Lab: Sections 7 and 8

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Note: This study guide contains my practice questions that I think will be useful for preparing you for the first exam in Calculus II.

Question 1: Evaluate the integral: $\int \frac{x^2}{1+x^6} dx$.

Question 2: Evaluate the integral: $\int \frac{4}{x^2+2x+5} dx$.

Question 3: Evaluate the integral: $\int \frac{4x}{x^2+4} dx$.

Question 4: Evaluate the integral: $\int \cot(x) dx$.

Question 5: Evaluate the integral: $\int \frac{(\sin^{-1}(x))^3}{\sqrt{1-x^2}} dx$.

Question 6: Evaluate the integral: $\int \left(e^{2x} + \frac{1}{\sqrt{x}} \right) dx$.

Question 7: Evaluate the integral: $\int \sec(x) dx$.

Question 8: Evaluate the integral: $\int \frac{\cos(x)}{\sqrt[3]{4 \sin(x)+1}} dx$.

Question 9: Find the area bounded by $y = 3x - x^2$ and the x - axis from $x = -1$ to $x = 4$.

Question 10: Let R be a region bounded by $y = x^2$, and $y = 3x$.

Find the volume of the above region generated by revolving R .

Part a: About $y = 9$.

Part b: About $x = -1$.

Question 11: Find the volume of the solid generated by revolving the region bounded by $y = x^2$, and the x - *axis* from $x = 0$ to $x = 2$.

Part a: About $x = 2$.

Part b: About $y = 4$.

Question 12: Evaluate the integral: $\int_1^e \frac{(\ln(x))^2}{x} dx$.

Good Luck in Exam 1