Chapter 7.4 Worksheet Name _____

	Objective	Rate your understanding of the objective				
Objective 1	Understand how to set up and solve an integral to find the length of a curve.	1	2	3	4	5
Objective 2	Understand how to set up and solve an integral to find surface areas of solids	1	2	3	4	5

Warmup

Write, but do not evaluate, indefinite integrals that describe the length of these curves. It is not necessary to simplify past the square in the arc length formula (By yourself)

1. $y = x$
2. $y = \tan(x)$
3. $y = x^2 + 4x + 4$

Problems

These problems involve arc length. You may reference Examples 213 and 214 in your example packet. (In groups)

1. Find the length of the function $y = \int \sqrt{x^4 - 1}\, dx$ contained within $3 \leq x \leq 10$.
2. Find the length of the curve $y = \frac{1}{2}(e^x + e^{-x})$ contained within $1 \leq x \leq 4$.

These problems involve surface area. You may reference Examples 216 through 218 in your example packet. (In groups)

1. Find the outer surface area of the paraboloid formed by revolving the parabola $y = x^2$ about the y-axis in the region $1 \leq x \leq 2$.
2. Find the outer area of the surface formed by revolving the curve x^3 around the x-axis in the region $0 \leq x \leq 2$.

Self Quiz

(By yourself)

1. Find the length of the curve $y = \frac{2}{3}(x - 1)^{\frac{3}{2}}$ contained in $0 \leq x \leq 5$.
2. Find the surface area of a cone with radius 5 and height 5 by setting up and evaluating an integral that finds the surface area of a solid formed by revolving a line around the x-axis. Ignore the base of the cone.

Reflection

	Objectives	Rate your understanding of the objective				
Objective 1	Understand how to set up and solve an integral to find the length of a curve.	1	2	3	4	5
Objective 2	Understand how to set up and solve an integral to find surface areas of solids	1	2	3	4	5

Study Skills:

- Remember to read through examples from the book BEFORE your professor goes over the section in class.
- After class read through the examples in your notes from that day and try to do the problems yourself (without looking at your notes).
- After class read through the examples from the book in the section you JUST covered and make sure you understand them.