ACE Calc I
Chapter 4A – Anti-differentiation

Assignment Sheet
**This is a tentative schedule only. Actual assignments may differ from what is shown.

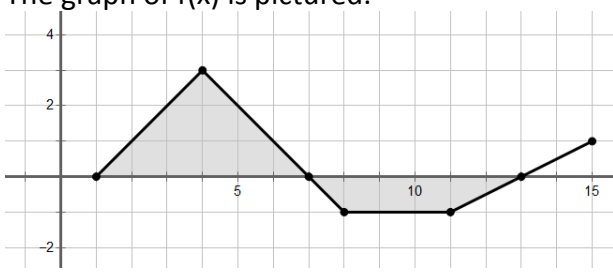| Day	Section	Page	Assignment
1	4.1 A Antiderivatives & Indefinite Integrals	251	Odds #11-31
2	4.1 B Differential Equations	251	Odds #35,39,41,43b,51,53,57,59,63
3	4.2 A Area & Summation	263	Odds #13-19,21,25,27,31,51
4	4.2 B Area Under a Curve	264	Odds #45,49,53,57
5	4.3 A Riemann Sums & Definite Integrals	273	Odds #3,5,7,17,21,27,31,51
6	4.3 B Properties of Definite Integrals	274	Odds #33,39,41,43,47,49
7	Review		
8	Test		

Chapter 4A – Board Problems

Day	A	B	C	D
1	$\int (2x+3)dx$	$\int\left(\sqrt[4]{x^3}+\dfrac{1}{x^2}\right)dx$	$\int (2x+1)(3x^2)dx$	$\int \dfrac{x^2+x-12}{x-3}dx$

2	Solve for a particular solution. $f''(x)=36x$ $f'(1)=16$ $f(0)=5$	Solve the differential equation for a particular solution. $\dfrac{dy}{dx}=x^2+1$, (0,1)	A car accelerates from 20mph to 65mph in 4 seconds. Assuming constant acceleration, find the distance the car travels in the 4 seconds.	Acceleration due to gravity is given by: $a(t)=-32\,ft/\sec^2$ Use anti-differentiation to find equations for $v(t)$ and $s(t)$.

3	Evaluate using sum formulas: $\displaystyle\sum_{i=1}^{50}2(i^3+1)$	Use sum formulas to eliminate Σ: $\displaystyle\sum_{i=1}^{n}(3i^2-i)\left(\dfrac{5}{n}\right)$	Find the approx. over & under estimates for the area below $y=\sqrt{x}+4$, on [0,6] using 6 equal width rectangles.	Find the approx. over & under estimates for the area below $y=\dfrac{4}{x-1}$, on [2,5] using 5 equal width rectangles.

4	Use limits to find the area below $y=3x+5$ on [0,4]	Use limits to find the area below $y=2x^2+3x$ on [1,5]

5	Use limits to evaluate: $\displaystyle\int_0^3 (2x+3)dx$	Use limits to evaluate: $\displaystyle\int_1^4 (x^3+2x)dx$

6	**A** Use limits to evaluate: $\displaystyle\int_1^2 (2x^2-4x)dx$	**B** $\displaystyle\int_1^3 f(x)dx=5$ and $\displaystyle\int_3^6 f(x)dx=-2$ Find: a. $\displaystyle\int_1^6 f(x)dx$ b. $\displaystyle\int_1^3 2f(x)dx$ c. $\displaystyle\int_6^3 f(x)dx$
	C $\displaystyle\int_5^7 f(x)dx=18$ and $\displaystyle\int_5^7 g(x)dx=4$ Find: a. $\displaystyle\int_5^7 [f(x)+g(x)]dx$ b. $\displaystyle\int_5^7 [f(x)+4]dx$ c. $\displaystyle\int_0^2 f(x+5)dx$	**D** The graph of f(x) is pictured. Find: a. $\displaystyle\int_1^5 f(x)dx$ b. $\displaystyle\int_1^{13} f(x)dx$ c. $\displaystyle\int_4^4 f(x)dx$