Quiz #1 Math 102 012

Name:	I.D.	Sec.	

48/7.3 Evaluate $\int \cot x dx$

$$\int \frac{\cos x}{\sin x} dx \quad u = \sin x \quad du = \cos x dx$$

$$= \int \frac{1}{u} du = \ln|u| + c = \ln|\sin x| + C$$

44/7.2 Find an equation of the curve that satisfies each point (x,y) on the curve the slope equals the square of the distance between the pointand the y-axis the point (-1,2) is on the curve.

$y' = x^2 \Rightarrow y = \frac{x^3}{3} + C$ at (-1,2) $C = \frac{7}{3}$

Quiz #2a Math 102 012

Name:	I.D.	Sec.	

30/7.4 Let $S = \sum_{k=0}^{n} ar^k$. Show that $S - rS = a - ar^{n+1}$.

$S = ar^0 + ar^1 + \cdots + ar^n$

$-rS = -ar - ar^2 \cdots - ar^{n+1}$

$S - rS = a - ar^{n+1}$.

2. Find the maximum and minimum bounds of the intgral $\int_0^3 x^3 + 2\,dx$

max $f(x) = x^3 + 2$

is 29 at $x = 3$

min is 2 at $x = 0$

$(3)(2) \leq \int_0^3 x^3 + 2\,dx \leq (3)(29)$

Quiz #2b Math 102 012

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40/7.4 Show that the sum of the first n consecutive positive odd integers is n^2.

$1 + 3 + \cdots + 2k-1$

$$\sum_{k=1}^{n} 2k-1 = 2\sum k - 1 = 2\,\frac{n(n+1)}{2} - n = n^2 + n - n$$

$$= n^2$$

2. Find the maximum and minimum bounds of the intgral $\int_0^{\pi} \sin x \, dx$

$0 \le \sin x \le 1$

$$0(\pi) \le \int_0^{\pi} \sin x \, dx \le 1(\pi)$$