NAME:

Class ID #:

1) Values of a function W(t) are given in the table to the right.

t	1	1.4	1.8	2.2	2.6	3
W(t)	25	28	35	45	50	60

a) Estimate $\int_{1}^{3} W(t)dt$ from left and from right then average them Left sum:

Right sum:

- b) For your estimate in part (a), what is n? what is Δt ?
- 2) Estimate the value of the definite integral $\int_{1}^{3} (\frac{6}{x}) dx$ by using n = 4 and computing:

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$f(x) = \frac{6}{x}$			

- a) The left hand sum
- b) The right hand sum
- 3) The marginal cost for a company is given by $C'(q) = 3q^2 48q + 100$ dollars/unit where q is the quantity [4p] produced. If C(0) = 500, find the total cost of producing 10 units.

- 4) Suppose that the velocity of an object is given by $v(t) = -t^2 + 8t + 10$, where t is in seconds. Estimate the distance traveled by the object during the first 5 seconds (that is, between t = 0 and t = 5) using t = 5
 - a) The left sum:
 - b) The right sum
- 5) Find an antiderivative F(x) with $F'(x) = e^{2x}$ and F(0) = 4

6) Evaluate the indefinite integrals of:

a)
$$\int (x^3 + \frac{2}{x^3} - 8) dx$$

b)
$$\int (\sqrt[3]{x} + 2) dx$$

c)
$$\int (x^2 - \frac{3}{2}\sqrt{x} + \frac{1}{\sqrt[3]{x^4}})dx$$

d)
$$\int (2 - \frac{4}{x} - \frac{1}{x^4}) dx$$

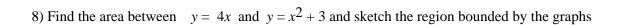
7) Evaluate the definite integrals of:

a)
$$\int_{1}^{e} \frac{6}{x} dx$$

b)
$$\int_{1}^{2} (6x^3 + 2)dx$$

c)
$$\int_{-2}^{1} (2-x-x^2)dx$$

d)
$$\int_{1}^{e} (x - \frac{1}{x} dx)$$



⁹⁾ Find the area between $y = x^2 - 4x + 3$ and $y = -x^2 + 2x + 3$ and sketch the region bounded by the graphs

¹⁰⁾ Find the area between $y = x^2 - 2x$ and the x-axis in [0, 3] and sketch the region bounded by the graphs

11) The marginal revenue for the price of tickets is given by $R' = 10q - 50$ dollars per ticket, where q is the number of tickets. Find the total revenue from the sale of tickets for the first 20 tickets.					
12) What should <i>A (annuity)</i> per year be so that the amount of a continuous money flow over 10 years at interest rate					
5%, compounded continuously, will be \$ 20,000?					
13) Find the present value of an investment over 15 years period if there is a continuous money flow of \$1000 per year and the current interest rate is 8% compounded continuously					