TABULAR RIEMANN SUMS

Sometimes the AP will ask you to find a Riemann sum, or to approximate an integral (same thing, right?), but won't give you a function to work with. Instead, they will give you a table of values for x and f(x). These are quite simple to evaluate. All you do is use the right-hand or left-hand sum formula, plugging in the appropriate values for f(x). One thing you should watch out for is that sometimes the x values are not evenly spaced, so make sure that you use the correct values for the width

Let's do an example.

Example 4: Suppose we are given the following table of values for x and f(x):

						13
X	2	4	6	8	10	12
f(x)	10	13	15	14	9	3

Use a right-hand Riemann sum with 5 subintervals indicated by the data in the $\int_{0}^{12} f(x)dx$.

Example 5: Given the following table of values for x and f(x):

					gymmenous yin de agreement management and the			
-	x	0	2 .	5 .	11 .	19	22 .	23
	f(x)	4	6	16	18	22	29	50

Use a *left-hand* Riemann sum with 6 subintervals indicated by the data in the table to approximate $\int_{0}^{23} f(x)dx$.

PROBLEM 6. Given the following table of values for t and f(t):

t	0	2	4	7.	11	13	14
f(t)	5	6	10	15	20 .	26	30

Use a right-hand Riemann sum with 6 subintervals indicated by the data in the table to approximate $\int_{0}^{14} f(t)dt$.

11. Suppose we are given the following table of values for x and g(x):

-			-			
x	0	1	3	5	9	14
g(x)	10	8	11	17	20	23

Use a left-hand Riemann sum with 5 subintervals indicated by the data in the table to approximate $\int_{0}^{14} g(x)dx$.

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Example 4: Suppose we are given the following table of values for x and f(x):

pic 4: 5	uppose we are g	iven the follow.	ing table of the		12
x	2	4	6	8	10 3
f(x)	10	13	15	14	9

Use a right-hand Riemann sum with 5 subintervals indicated by the data in the table to approximate

$$\int_{2}^{12} f(x)dx. \frac{2}{2} 2(13) + 2(15) + 2(14) + 2(14) + 2(14) + 2(14)$$

Example 5: Given the following table of values for x and f(x):

							T	22
			2	5	11	19	22 .	23
	x	0	2		10	22	29	. 50
	f(x)	4	6	16	. 18	22		
- 1) (")							•

Use a left-hand Riemann sum with 6 subintervals indicated by the data in the table to approximate

$$\int_{0}^{23} f(x)dx \cdot \sqrt{2} \left(\frac{1}{4} \right) + \left(\frac{1}{3} \right) \left(\frac{1}{6} \right) + \left(\frac{1}{6} \right) + \left(\frac{1}{8} \right) + \left(\frac{$$

PROBLEM 6. Given the following table of values for t and f(t):

1	I KODLEM O. CA.							1
i			4	7	11	13	14	1
-	t 0	2	4	15	20	26	30	
	f(t) 5	6	10	-15	20	20		

Use a right-hand Riemann sum with 6 subintervals indicated by the data in the table to approximate

Use a right-hand Riemann sum with 6 subintervals indicated by the data in the table to approximately
$$\int_0^{14} f(t)dt$$
. $\frac{2}{5}$ $\frac{2(10)}{5}$ $\frac{4(15)}{5}$ $\frac{4(20)}{5}$ $\frac{2(76)}{5}$ $\frac{4(150)}{5}$

Suppose we are given the following table of values for x and g(x):

11. Suppose	we are given		2	5	9	14
x	0	1	11	17	20	23
q(x)	10	8	111			

Use a left-hand Riemann sum with 5 subintervals indicated by the data in the table to approximate

