

FUN	Notes Unit 6		
1	Topic: 6.2	Approximating Areas with Riemann Sums	
Using all methods and tables			
Learning Objective LIM-5.A: Approximate a definite integral using geometric and numerical methods.			

t (hours)	0	2	4	5	6	9	12
$P'(t)$ people/hour	41	30	54	26	21	44	11

Tiffani posts a picture of her posing with Sir Isaac from the pop group Sir Isaac and the Newtons on her Instagram at 9 AM. The rate that her followers view her picture is modeled with selected values shown in the table above where $t = 0$ represents 9 AM and the rate is measured in people per hour. Use the data in the table above to approximate the following.

Example 1: Use a Right Riemann Sum with 3 subintervals to approximate the area between $P'(t)$ and the t -axis from $t = 0$ to $t = 5$. Include units of measure with your answer. What does this answer represent in the context of the problem?

<p>Include Noun Units Time</p>
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t (hours)	0	2	4	5	6	9	12
$P'(t)$ people/hour	41	30	54	26	21	44	11

Example 2: Use a Left Riemann Sum with 4 subintervals to approximate the area between $P'(t)$ and the t -axis from $t = 4$ to $t = 12$. Using correct units, interpret your answer in context of the problem.

t (hours)	0	2	4	5	6	9	12
$P'(t)$ people/hour	41	30	54	26	21	44	11

Example 3: Use a Midpoint Riemann Sum with 3 subintervals to approximate the area between $P'(t)$ and the t -axis from $t = 0$ to $t = 12$. Using correct units, interpret your answer in context of the problem.

Example 4: The following table shows the speed in miles per hour of a cyclist at various times.

Time (min)	0	2	5	6	9	10	12
Speed (mph)	33	25	27	13	21	5	9

Use a trapezoidal approximation to find the distance (in miles) the cyclist traveled in the 12-minute time interval.

Using correct units, interpret your answer in context of the problem.

Note: The distance between your given values of t do not have to be equal. This is true when computing with a rectangular Riemann Sum as well.