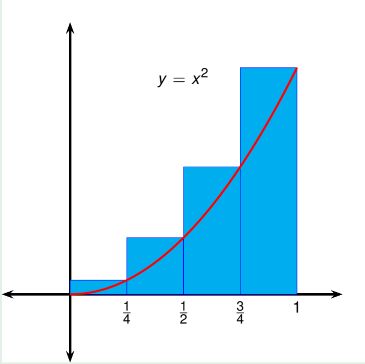
Calculus I
Writing a Riemann sum, part 1

Todor Milev

2019

Example

Find the sum of the areas of the four approximating rectangles obtained using right endpoints.



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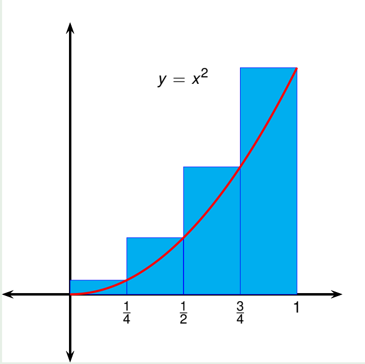

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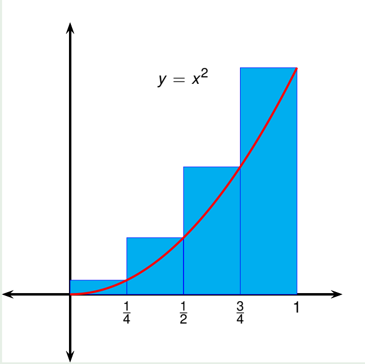

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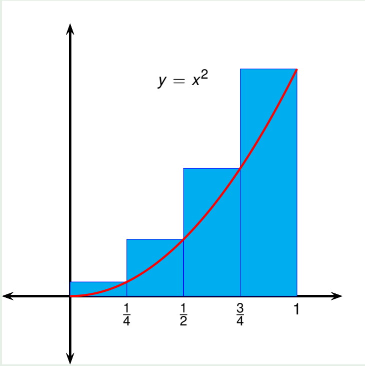
Find the sum of the areas of the four approximating rectangles obtained using right endpoints.

- Let R_4 denote the sum of the areas of the rectangles.
- Each rectangle has width $\frac{1}{4}$.



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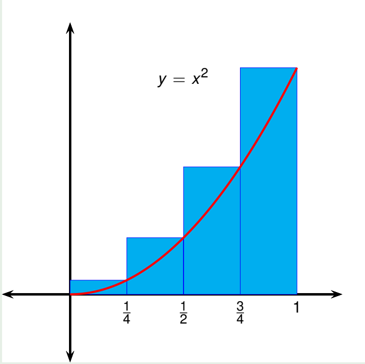
  ? , **?** , **?** , and **?** .



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- Let R_4 denote the sum of the areas of the rectangles.
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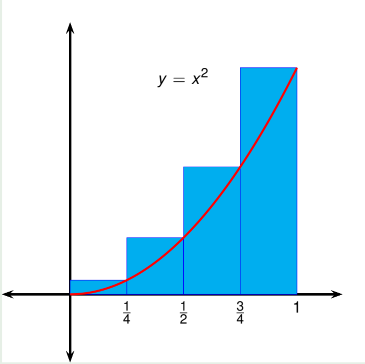
- The heights are $\left(\frac{1}{4}\right)^2$, $\left(\frac{1}{2}\right)^2$, $\left(\frac{3}{4}\right)^2$, and 1^2.



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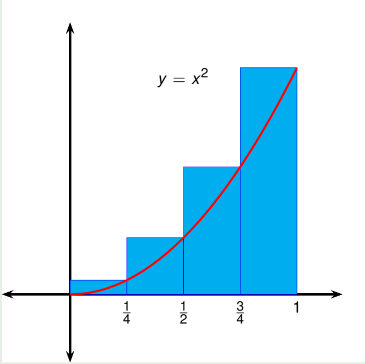

$$R_4 = \frac{1}{4} \cdot \left(\frac{1}{4}\right)^2 + \frac{1}{4} \cdot \left(\frac{1}{2}\right)^2 + \frac{1}{4} \cdot \left(\frac{3}{4}\right)^2 + \frac{1}{4} \cdot (1)^2$$

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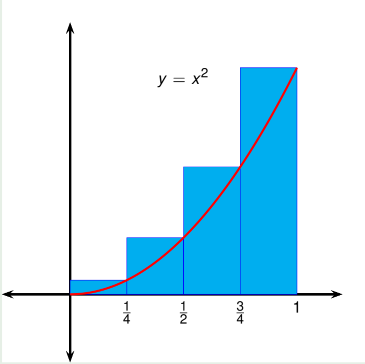

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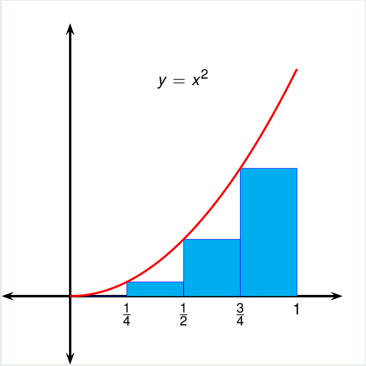

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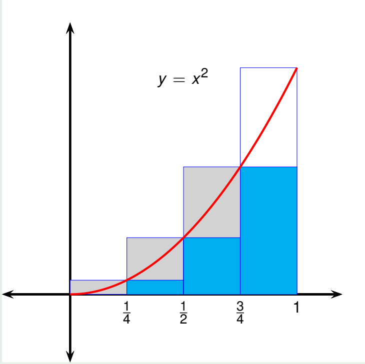

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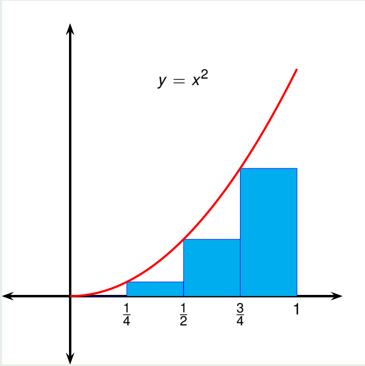

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