

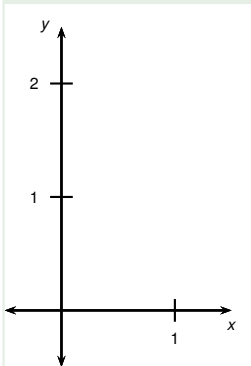
# Calculus I

## Area between two parabolas, part 2

Todor Milev

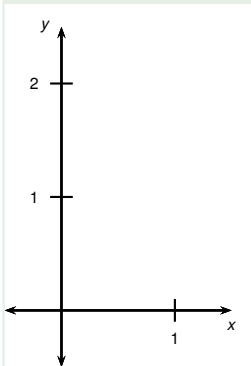
2019

## Example



Find the area of the region enclosed by the parabolas  $y = x^2$  and  $y = 2x - x^2$ .

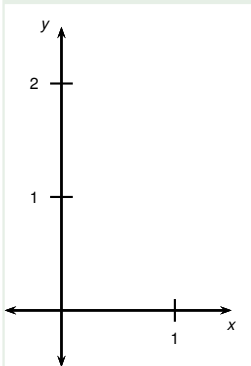
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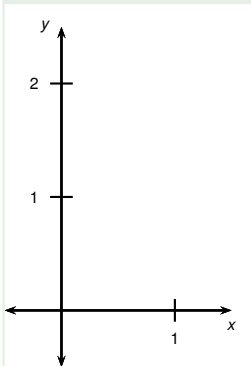


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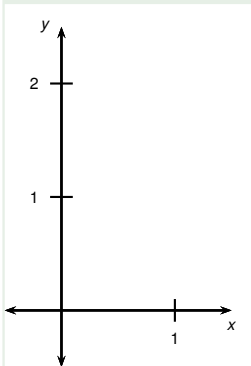
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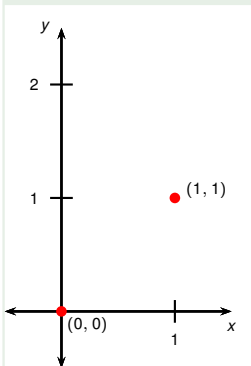
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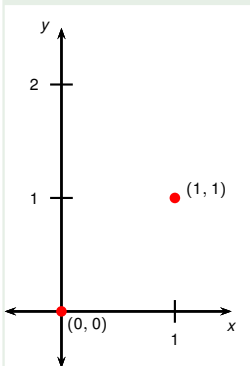
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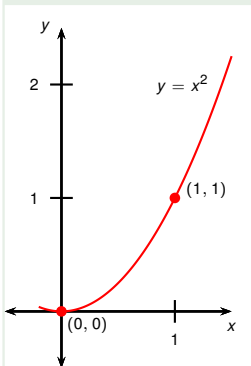
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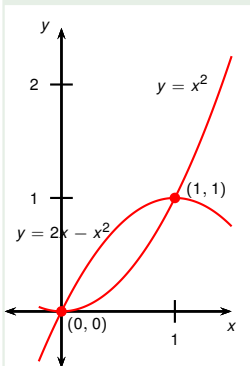
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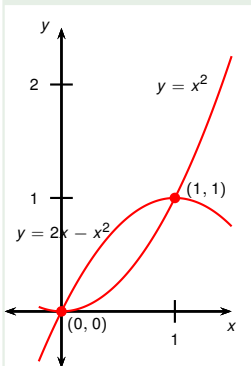
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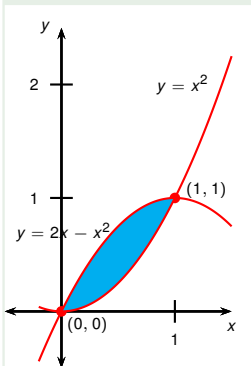
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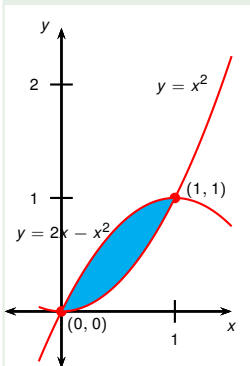
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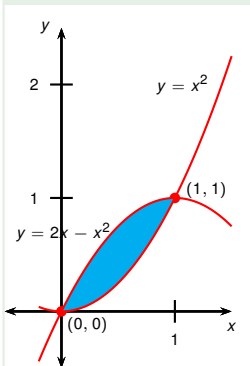
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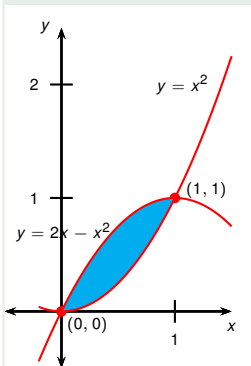
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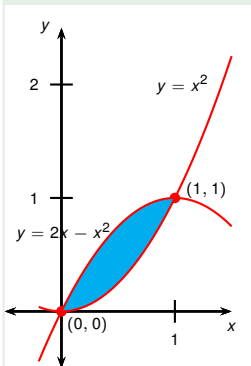
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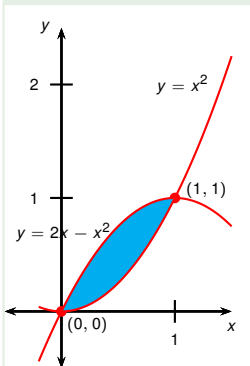
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$$\begin{aligned} A &= \int_0^1 (2x - 2x^2) dx = 2 \int_0^1 (x - x^2) dx \\ &= 2 \left[ \frac{x^2}{2} - \frac{x^3}{3} \right]_0^1 \end{aligned}$$

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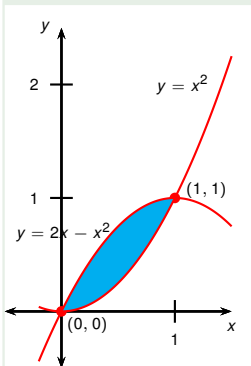
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