

Vector Calculus

Dr. D. Sukumar

January 4, 2016

Wish you a Happy New Year 2016

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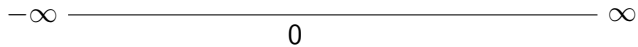
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- ▶ Differential Equations (ordinary and partial)
- ▶ Modeling and solving

$$f : \mathbb{N} \rightarrow \mathbb{R}$$

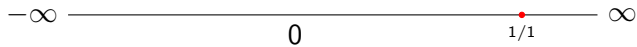
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$$\left(\frac{1}{n}\right)_{n=1}^{\infty}$$



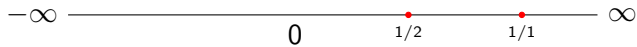
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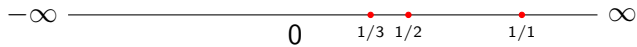
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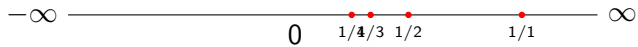
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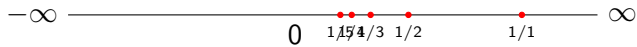
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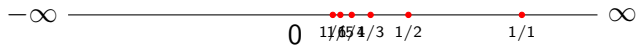
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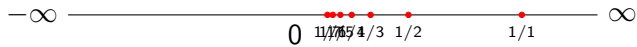
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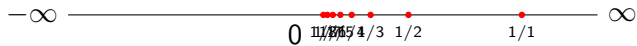
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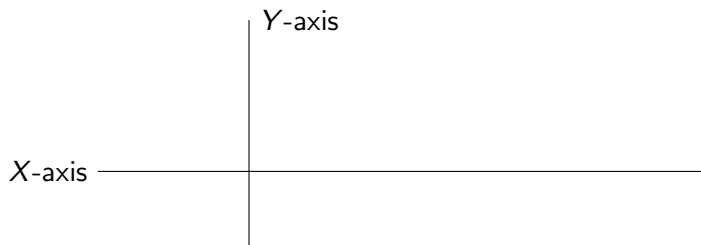
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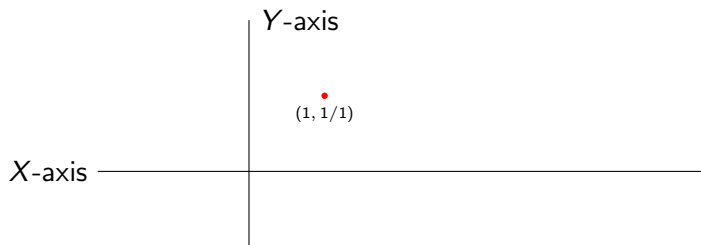
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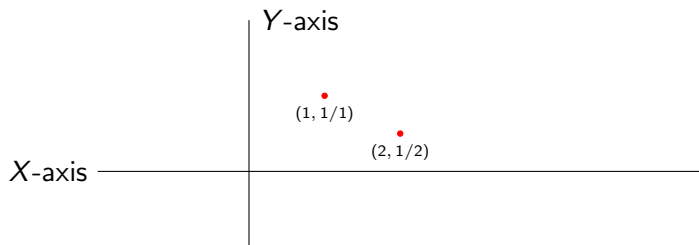
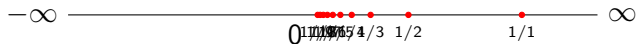
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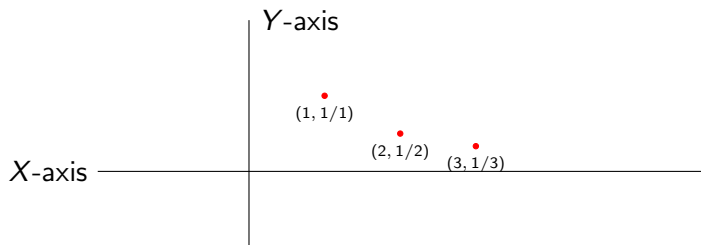
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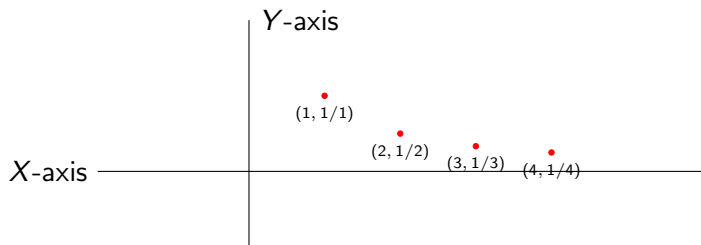
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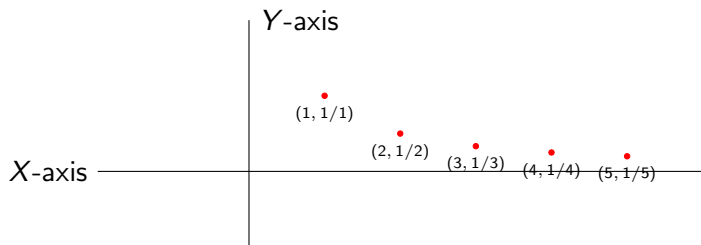
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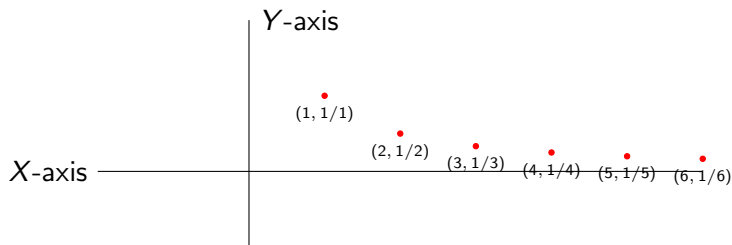
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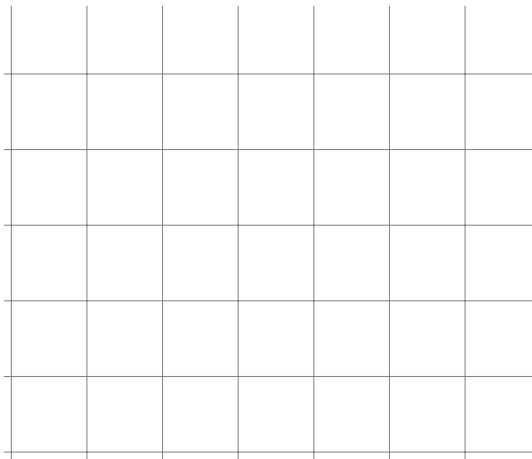


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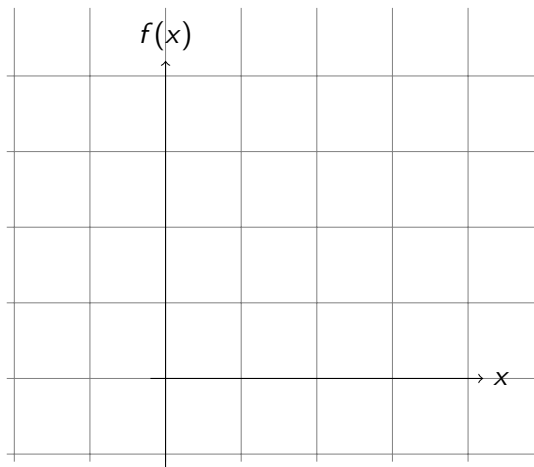
Function



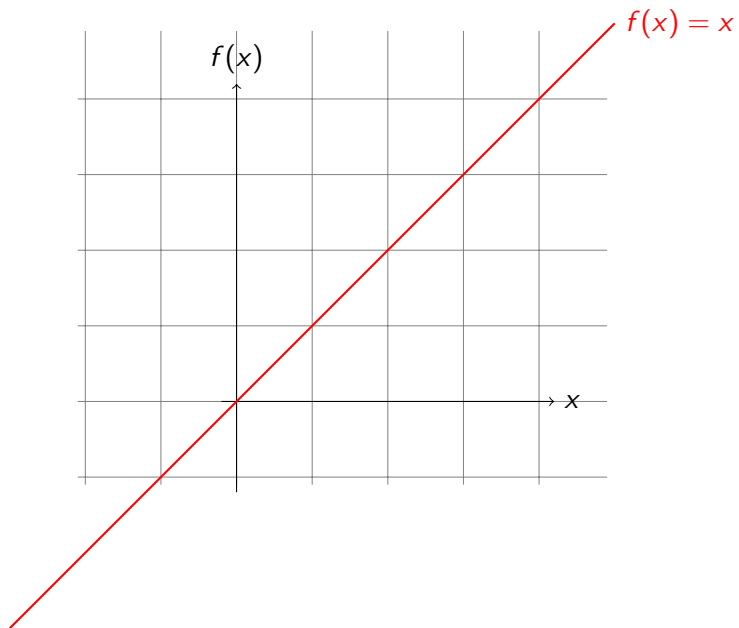
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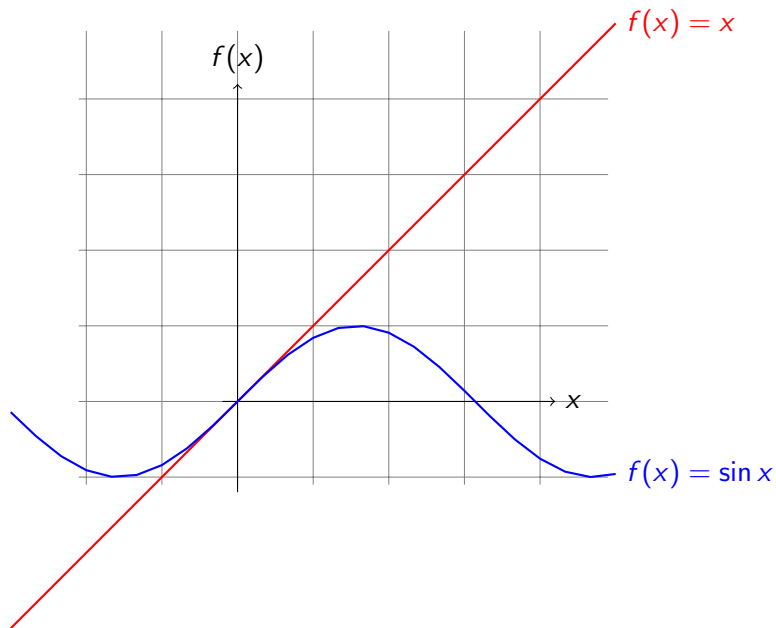
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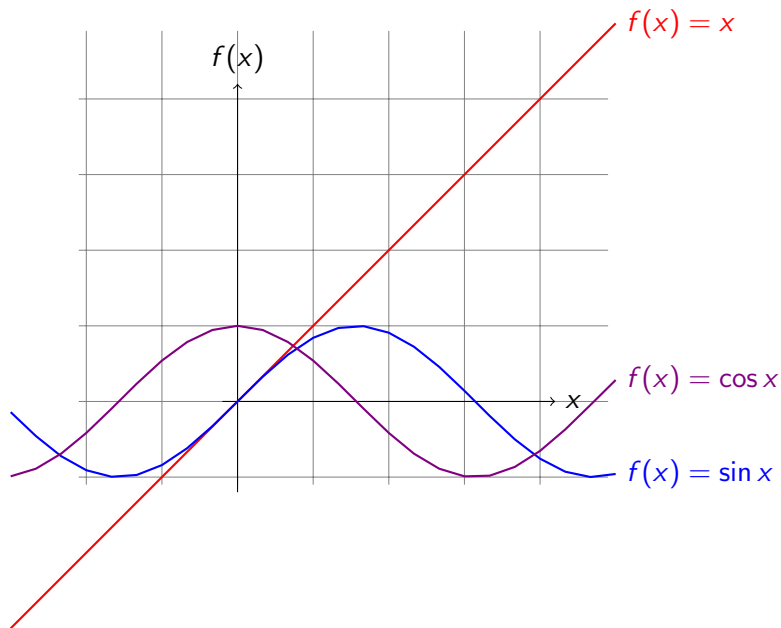
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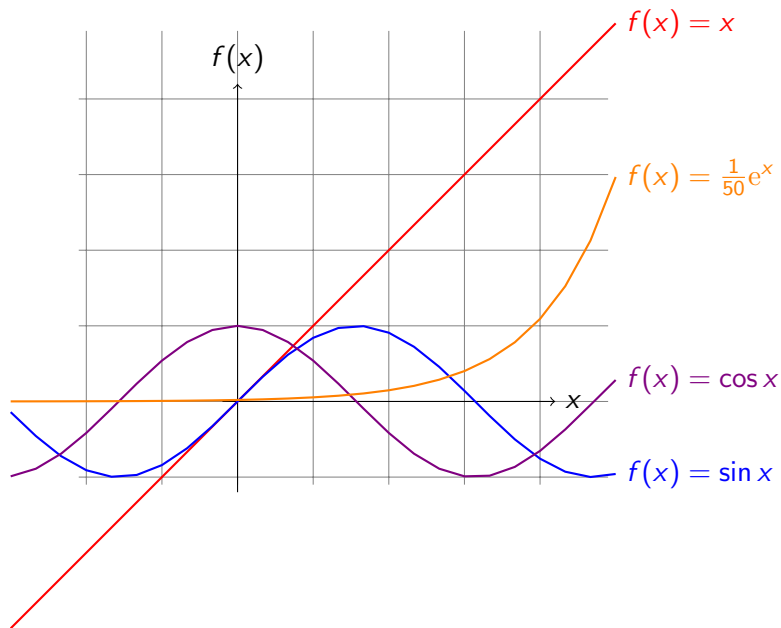
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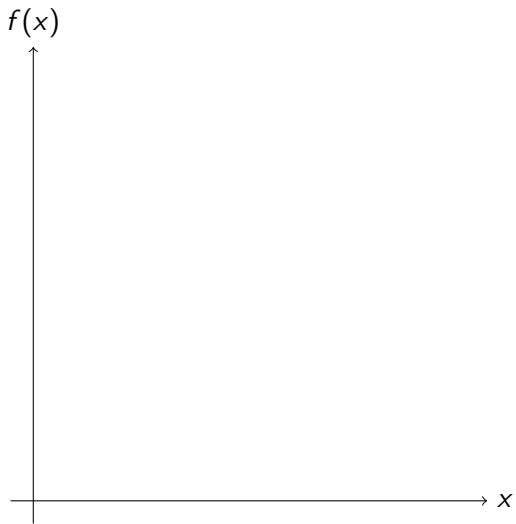
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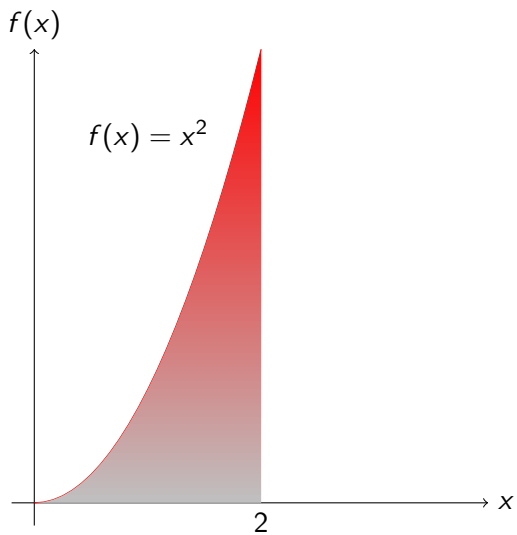
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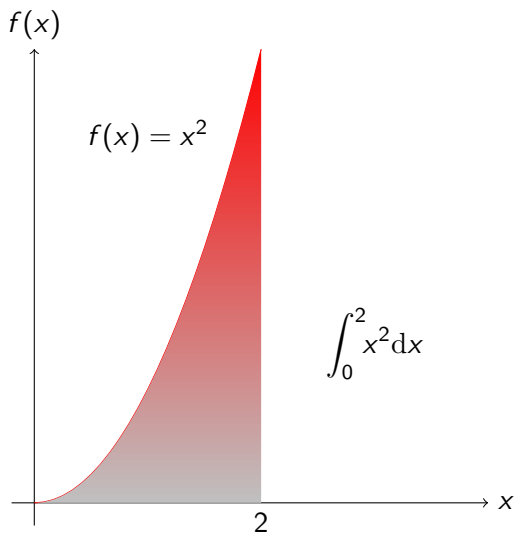
Area under the curve



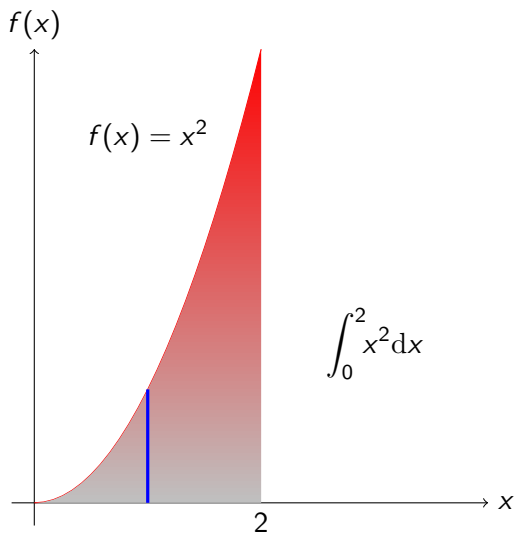
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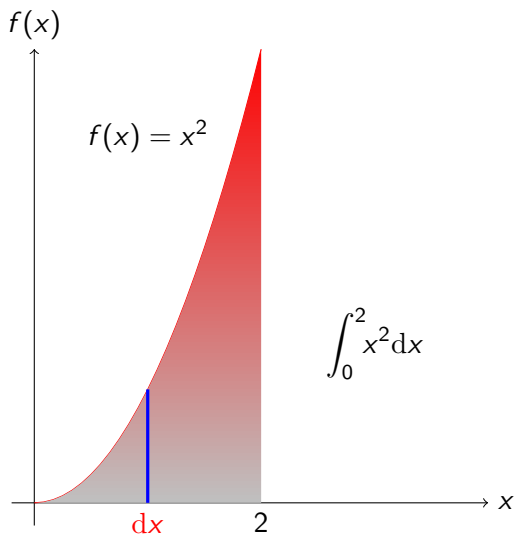
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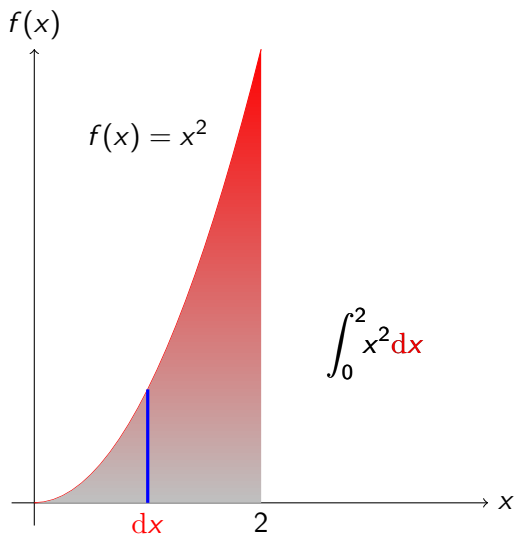
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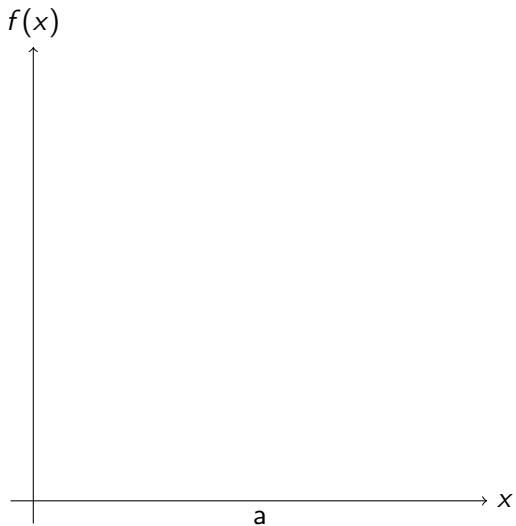
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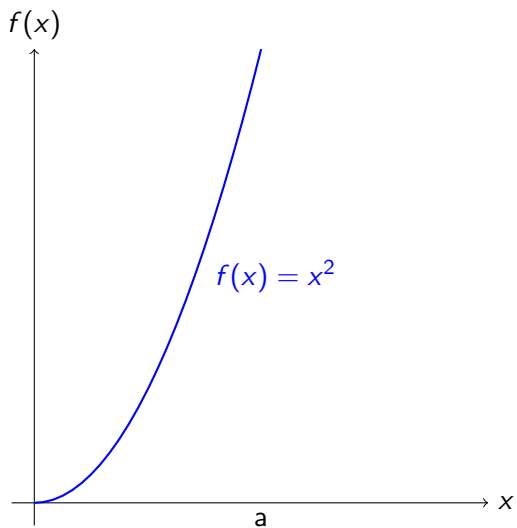
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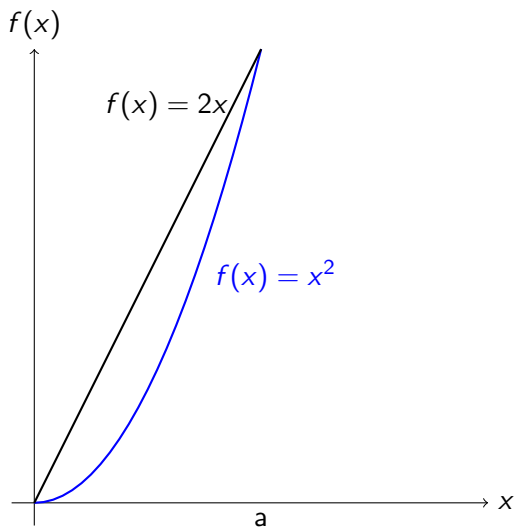
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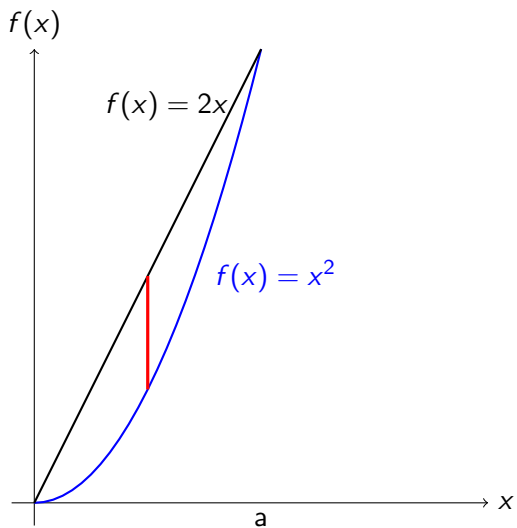
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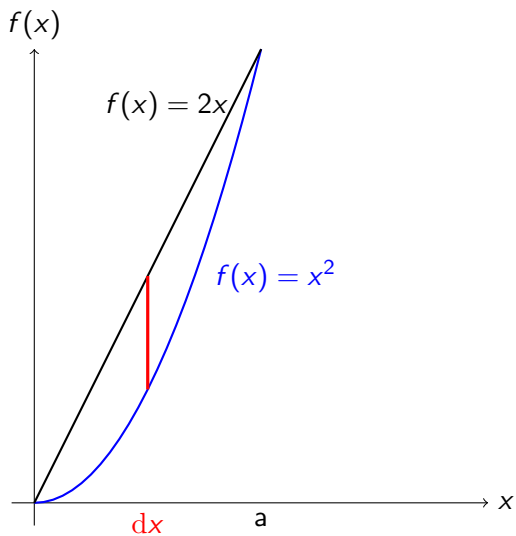
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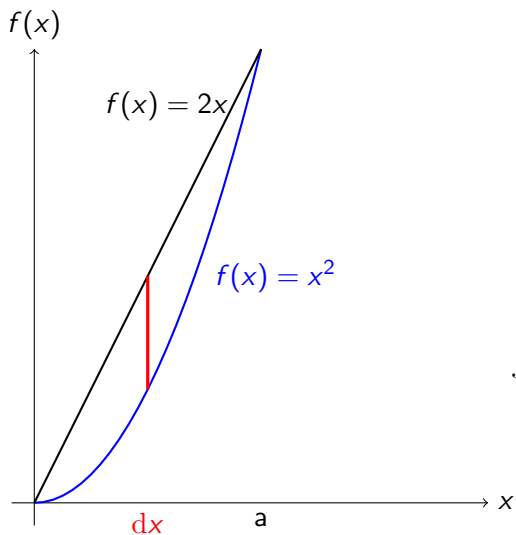
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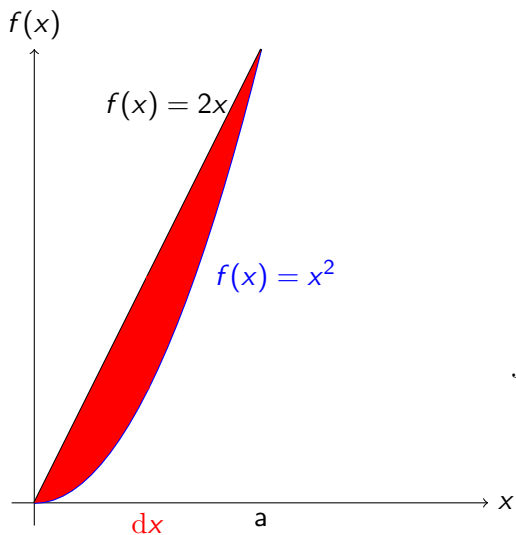


Area between curves



$$\int_0^a (2x - x^2) dx$$

Area between curves



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Area between curves

(basic element, upper curves, lower curves)

$$\text{Area} = \int_a^b [f(x) - g(x)] dx$$

1. If f and g crosses each other
2. If end points are not given
3. Area between 3 functions and more
4. Area with respect to y - axis

Find area between curves

Find the area enclosed by the curves

1. $x = 2y^2$, $x = 0$, $y = 3$ 18
2. $4x^2 + y = 4$, $x^4 - y = 1$ 104/15
3. Y-axis, $\cos x$, $\sin x$ $\sqrt{2} - 1$
4. $y = 3 - x^2$, $y = -1$ 32/3