

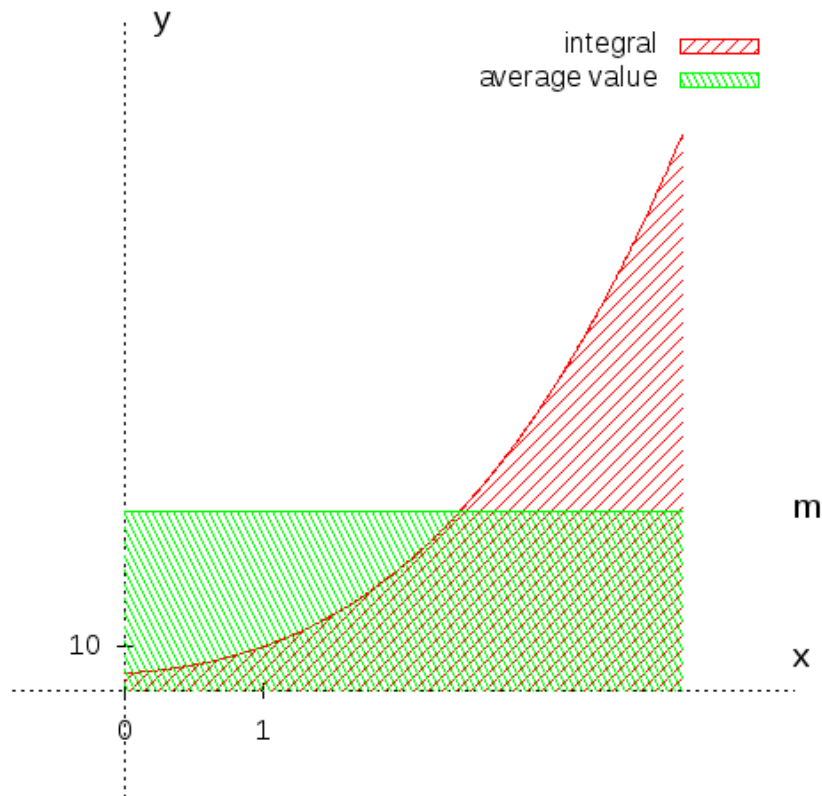
Integration of $x \mapsto x^3 + 3x^2 + 2x + 4$

We search the integral of $x \mapsto x^3 + 3x^2 + 2x + 4$ from 0 to 4 :

$$\begin{aligned} & \int_0^4 (x^3 + 3x^2 + 2x + 4) dx \\ &= \left[\frac{x^4}{4} + x^3 + x^2 + 4x \right]_0^4 \\ &= 160 \\ &\approx 160 \end{aligned}$$

The average value of the function is: $m = \frac{1}{4-0} \int_0^4 (x^3 + 3x^2 + 2x + 4) dx = 40 \approx 40$

A plot is (by definition of the average value, red and green areas are equal):



Note: these results have been obtained from an automated program and are not guaranteed to be exact.

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