Exempel

Beräkna

$$\iint_D 5xy^4 \, dxdy$$

där $D = \{(x, y) \in \mathbb{R}^2 : x^4 \leq y \leq x^3\}$.

Lösning

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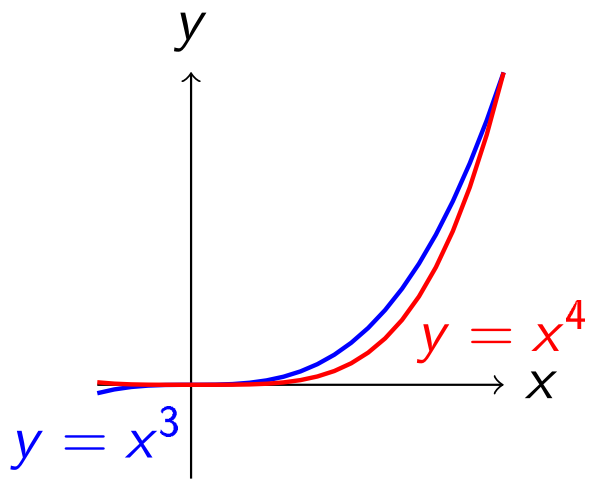

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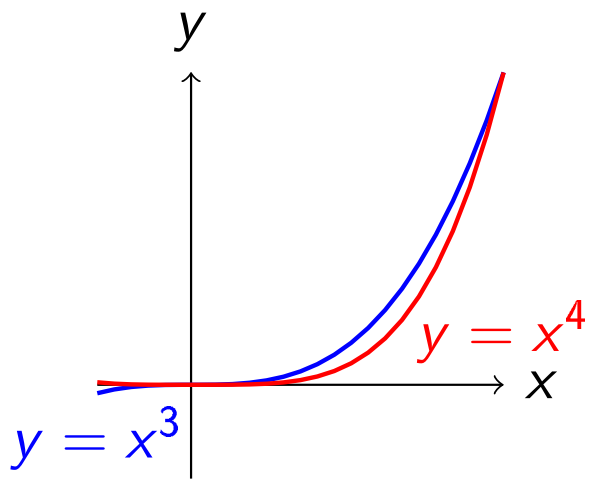

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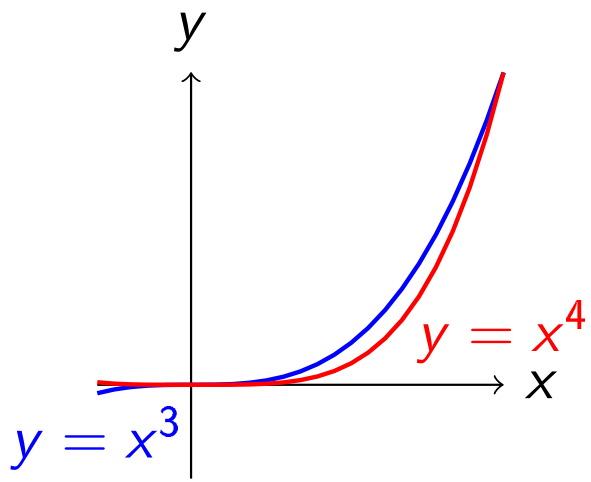

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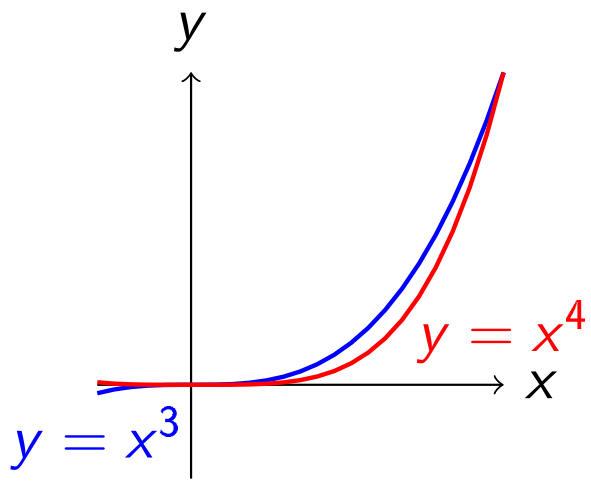

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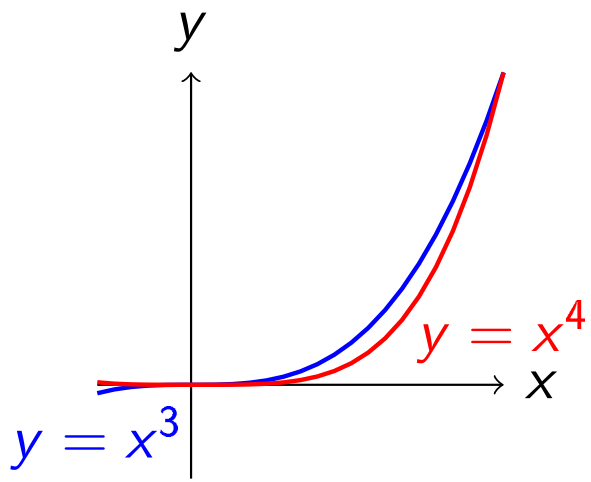

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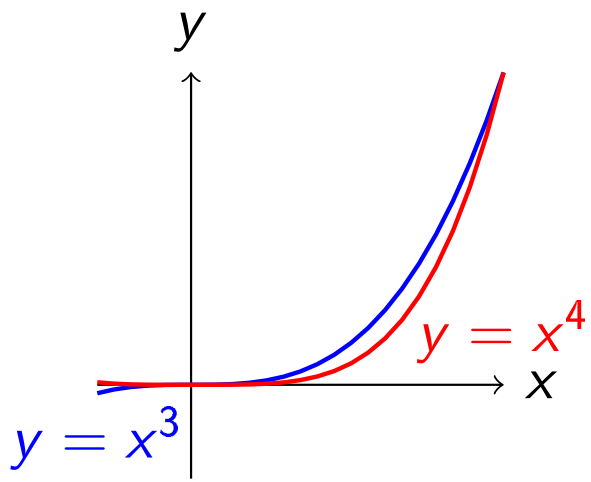

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$$\int_0^1 \left(x \cdot x^{15} - x \cdot x^{20} \right) dx = \left[\frac{x^{17}}{17} - \frac{x^{22}}{22} \right]_0^1 = \frac{5}{374}.$$