Integrals

Kristýna Kuncová

Mathematics 2 20/21

Question (True – False)

Let f be a function. Then $\int_0^2 f(x)\,\mathrm{d}x \leq \int_0^3 f(x)\,\mathrm{d}x$.

Question (True – False)

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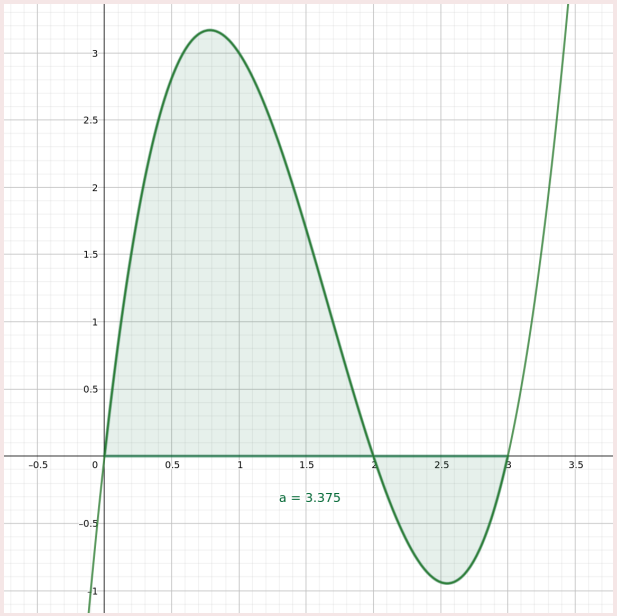
False.

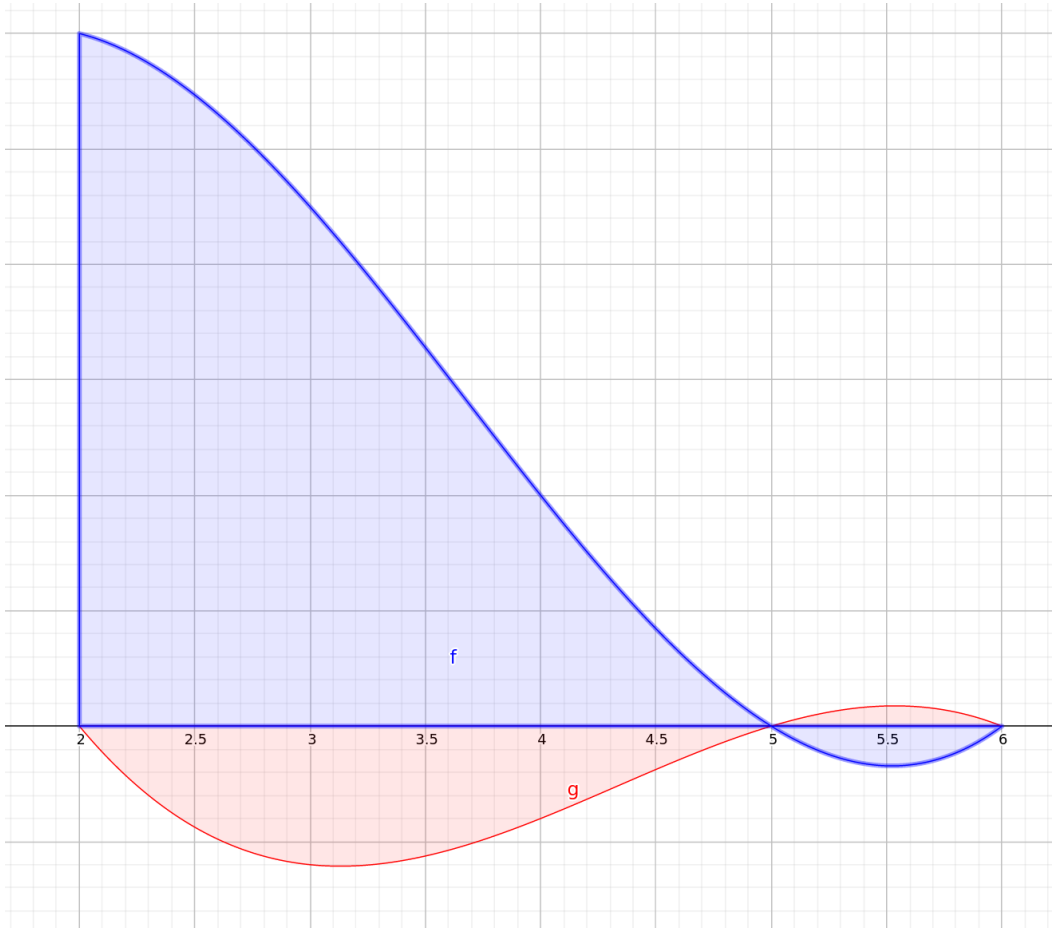


Question (True – False)

A Let $g(x) \leq f(x)$ for all $2 \leq x \leq 6$. Then $\int_2^6 g(x)\,\mathrm{d}x \leq \int_2^6 f(x)\,\mathrm{d}x$.

B Let $\int_2^6 g(x)\,\mathrm{d}x \leq \int_2^6 f(x)\,\mathrm{d}x$. Then $g(x) \leq f(x)$ for all $2 \leq x \leq 6$.

True.
False.



Question

Use the Riemann sums and estimate the integral

$$\int_0^{15} f(x)\,\mathrm{d}x.$$

Check the table for some values of f:

x	0	3	6	9	12	15
$f(x)$	50	48	44	36	24	8

Table: Applied Calculus, 6th Edition, Deborah Hughes-Hallett and col.

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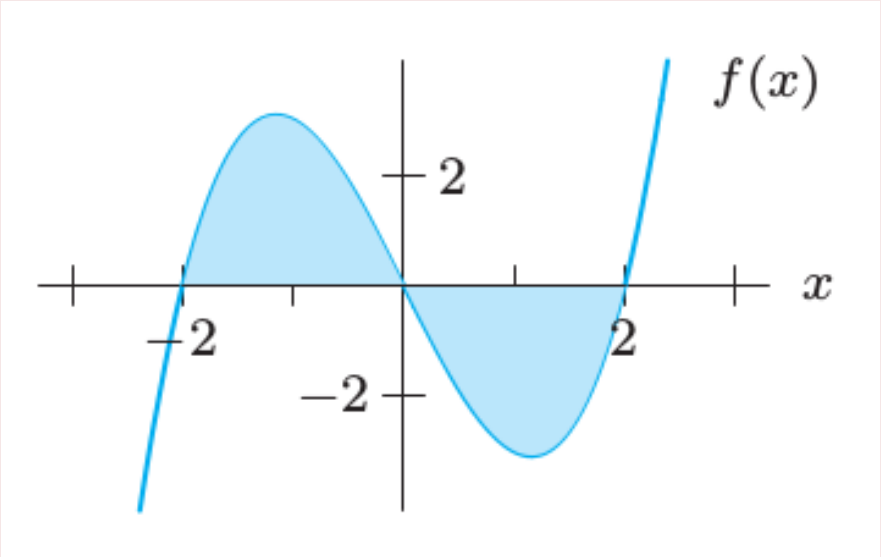
Upper estimat: 606
Lowe estimate: 480

Question

Let f be an odd function such that $\int_{-2}^{0} f(x)\,\mathrm{d}x = 4$. Find

1. $\int_{0}^{2} f(x)\,\mathrm{d}x$
2. $\int_{-2}^{2} f(x)\,\mathrm{d}x$



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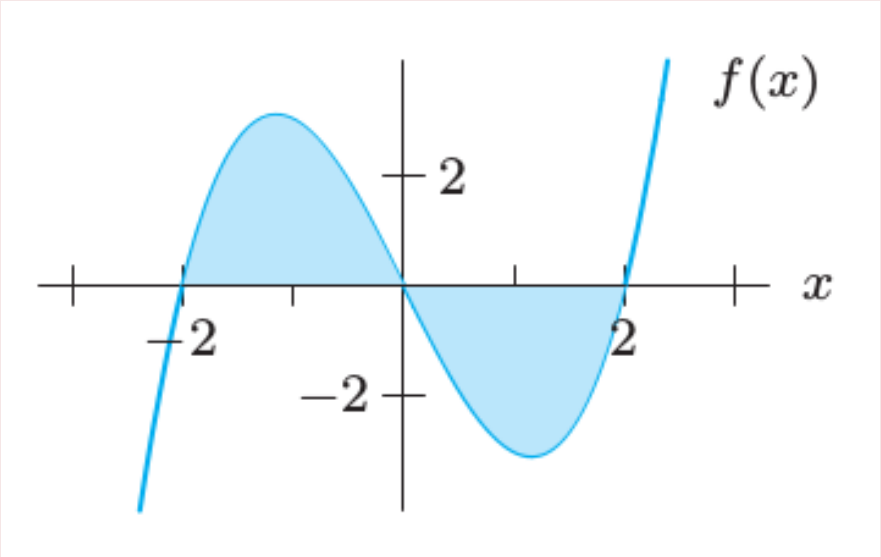

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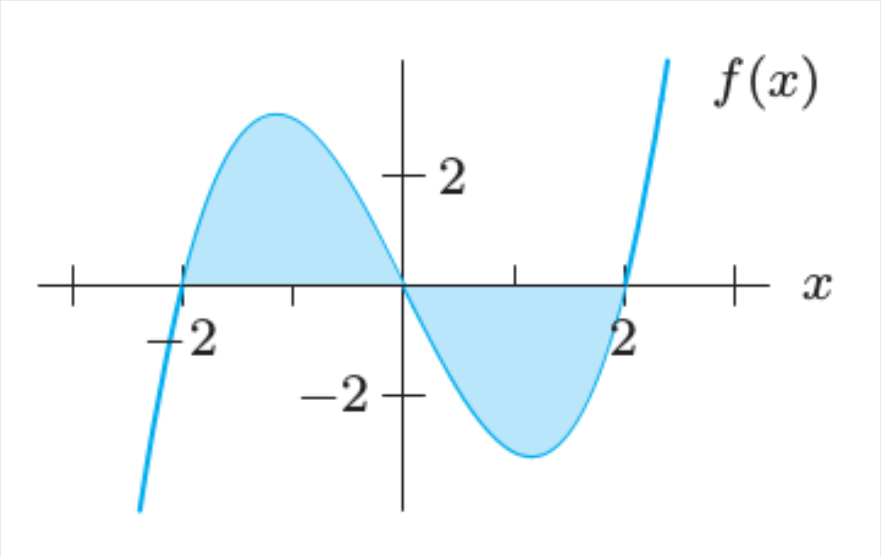

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