

Lesson 4.1 · Practice

No calculator required | Name: _____

1. Find $\int (4x^3 - 2x + 1) dx$ and check it.

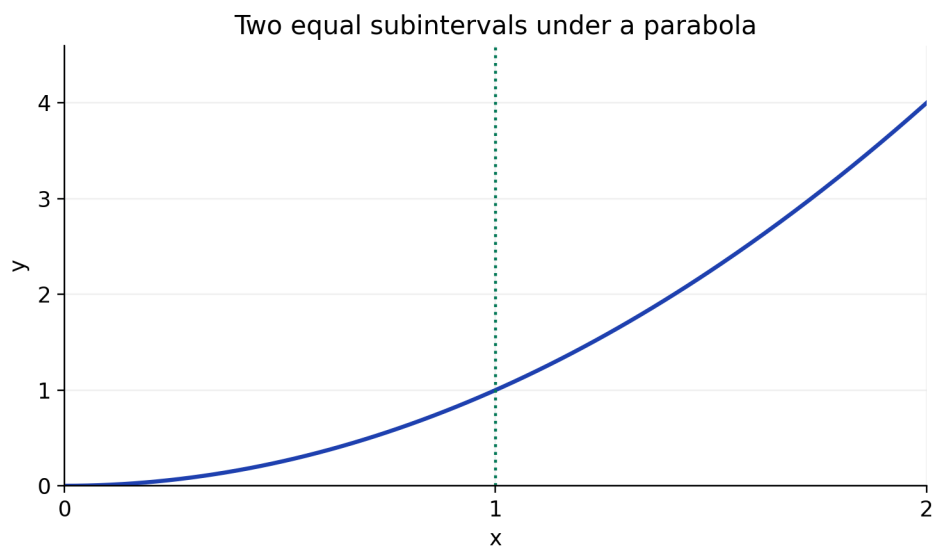
2. Find $\int (2/x + e^x) dx$ on an interval excluding zero.

3. Solve $s''(t) = 6t$ with $s'(0) = 2$ and $s(0) = 1$.

Lesson 4.2 · Practice

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4. Approximate $\int_0^2 x^2 dx$ using two equal subintervals with left and right sums.



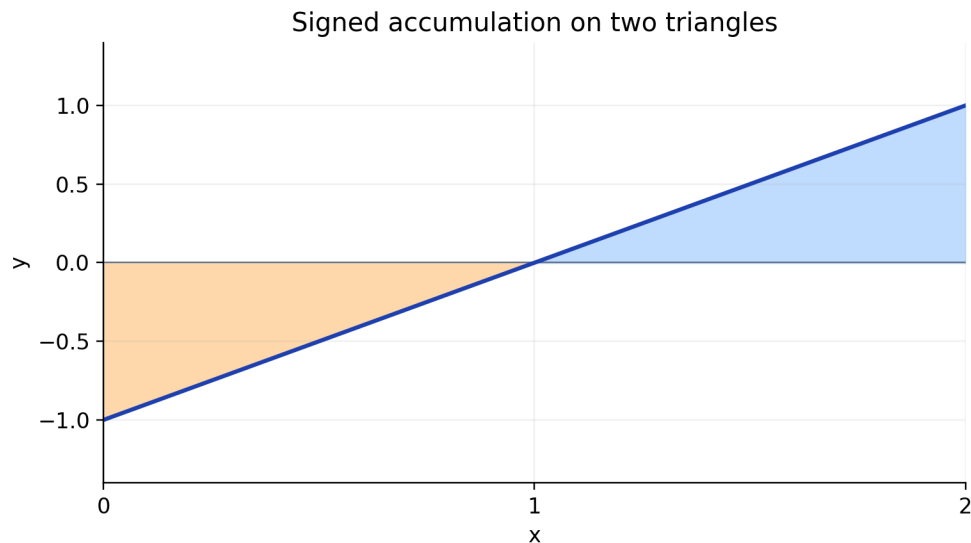
Choose left and right endpoint heights on each interval.

5. A table gives $f(0) = 1$, $f(1) = 3$, and $f(3) = 5$. Use the trapezoidal rule to approximate $\int_0^3 f(x) dx$.

Lesson 4.2 · Practice

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6. Find $\int_0^2 (x - 1) dx$ geometrically. Compare it with total geometric area.



Compare the region below the axis with the region above it.

Lesson 4.3 · Practice

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7. Differentiate $A(x) = \int_0^{3x} (t^2 + 1) dt$.

8. Evaluate $\int_1^3 (2x + 1) dx$.

9. Differentiate $B(x) = \int_x^{x^2} e^t dt$.

Lesson 4.4 · Practice

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10. Find $\int 3x^2 e^{x^3} dx$.

11. Evaluate $\int_0^1 \frac{2x}{x^2 + 1} dx$.

12. Find $\int \frac{1}{4 + x^2} dx$ and verify the coefficient.
