

6.1. Estimating Areas Under Curves

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6.1. Program for RAM

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6.2 & 6.3. Negative Areas & Properties of Integrals

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6.4. The Fundamental Theorem of Calculus (FTC)

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6.3. Indefinite Integrals

Supplemental Problems

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6.4. Leibniz's Rule

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Notes:

1. Just find the percent relative error, not the absolute error.

Supplemental Problems:

- 1) Verify the indefinite integral by differentiation.

$$\begin{aligned}\int \sqrt{a^2 - x^2} \, dx &= \\ &= \frac{x}{2} \sqrt{a^2 - x^2} + \frac{a^2}{2} \sin^{-1} \left(\frac{x}{a} \right) + k \quad a > 0\end{aligned}$$

- 2) Use the integral from problem 1 to find the formula for the area of a circle of radius a .