

JANUARY 17

How is area different
from volume?

$$\begin{aligned} \int_{-1}^0 x^3 - 2x^2 - 3x \, dx \\ &= \left. \frac{x^4}{4} - \frac{2x^3}{3} - \frac{3x^2}{2} \right|_{-1}^0 \\ &= \frac{0^4}{4} - \frac{2(0)^3}{3} - \frac{3(0)^2}{2} - \left(\frac{(-1)^4}{4} - \frac{2(-1)^3}{3} - \frac{3(-1)^2}{2} \right) = 0 - \left(\frac{1}{4} - \frac{2}{3} - \frac{3}{2} \right) \\ &\quad - \left(\frac{1}{4} + \frac{2}{3} - \frac{3}{2} \right) \end{aligned}$$

