

$\int_{-9}^0 (2 + \sqrt{81 - x^2}) dx$ can be interpreted as the area under the graph of $f(x) = 2 + \sqrt{81 - x^2}$ between $x = -9$ and $x = 0$. This is equal to one-quarter the area of the circle with radius 9, plus the area of the rectangle, so $\int_{-9}^0 (2 + \sqrt{81 - x^2}) dx = \frac{1}{4}\pi \cdot 9^2 + 2 \cdot 9 = 18 + \frac{81}{4}\pi$.

