$$
\begin{aligned}
A = \lim_{n\to\infty} \Delta x \Big(a^2 + \Big(a^2 + 2a\Delta x + (\Delta x)^2 \Big) \\
+ \Big(a^2 + 2\cdot 2a\Delta x + 2^2 (\Delta x)^2 \Big) \\
+ \Big(a^2 + 2\cdot 3a\Delta x + 3^2 (\Delta x)^2 \Big) \\
+ \dots \\
+ \Big(a^2 + 2\cdot (n-1)a\Delta x + (n-1)^2 (\Delta x)^2 \Big) \Big) \\
= \frac{1}{3}\left(b^3 - a^3\right) \qquad (6.34)
\end{aligned}
$$