$v(t) = e^t + 4$, $\quad s(0) = 2 \qquad$ Find $s(t) = ?$

A) $s(t) = e^t + 1$

C) $s(t) = e^t + 4t + 11$

B) $s(t) = e^t - 2t + 2$

D) $s(t) = e^t + 4t + 1$

$$s(t) = \int v(t)\, dt = \int (e^t + 4)\, dt = e^t + 4t + C$$

$$(4t^0)$$

$s(t) = e^t + 4t + C$

$s(0) = 2$

$s(0) = e^0 + 4 \cdot 0 + C = 2$

$= 1 + 0 + C = 2$

$\boxed{C = 1}$