$$\sqrt{(dx/dt)^2 + (dy/dt)^2 + (dz/dt)^2} \;=\; \sqrt{1^2 + (2t)^2 + (3t^2)^2} \;=\; \sqrt{1 + 4t^2 + 9t^4}$$

Then $\int_C (2x + 9z)\, ds \quad = \int_0^1 (2t + 9t^3)\sqrt{1 + 4t^2 + 9t^4}\, dt$

$$\left[\text{let } u = 1 + 4t^2 + 9t^4 \quad \Rightarrow \quad \tfrac{1}{4}\, du = (2t + 9t^3)\, dt \;\right]$$

$$= \int_1^{14} \tfrac{1}{4}\sqrt{u}\, du = \tfrac{1}{6} u^{3/2}\Big]_1^{14} = \tfrac{1}{6}(14^{3/2} - 1)$$