

$$\mathbf{r}(t) = \langle 2 \sin t, 5t, 2 \cos t \rangle \Rightarrow \mathbf{r}'(t) = \langle 2 \cos t, 5, -2 \sin t \rangle \Rightarrow$$
$$|\mathbf{r}'(t)| = \sqrt{(2 \cos t)^2 + 5^2 + (-2 \sin t)^2} = \sqrt{29}.$$

Then we have $L = \int_{-5}^5 |\mathbf{r}'(t)| dt = \int_{-5}^5 \sqrt{29} dt = [\sqrt{29} t]_{-5}^5 = 10\sqrt{29}.$