13.3, number 11: **Find the length of the curve**
$\overrightarrow{r}(t) = (4 \cos t) \overrightarrow{i} + (4 \sin t) \overrightarrow{j} + 3t \overrightarrow{k}$, **for** $0 \le t \le \pi/2$ **.**

Answer: The length of the curve is

$$\int_0^{\pi/2} |\overrightarrow{r}'(t)| dt = \int_0^{\pi/2} |-4 \sin t \overrightarrow{i} + 4 \cos t \overrightarrow{j} + 3 \overrightarrow{k}| dt$$
$$= \int_0^{\pi/2} \sqrt{16 \sin^2 t + 16 \cos^2 t + 9} dt$$
$$= \int_0^{\pi/2} 5$$
$$= \boxed{\frac{5\pi}{2}}$$