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3. $E = 100 \cos(2\pi 10^9 t - 140 z)\, \hat{a}_x \ V/m$

$\beta = 140$

$f = 10^9 \ Hz$

$$\beta = \frac{2\pi}{\lambda} \rightarrow \lambda = \frac{2\pi}{\beta}$$

$$L = n\frac{\lambda}{2} \rightarrow \text{ambil } n = 1$$

$$L = 1 \cdot \frac{1}{2} \cdot \frac{2\pi}{\beta}$$

$$L = \frac{\pi}{140}$$

$$L = 0{,}0224 \ m$$