An alternative way to sketch it could be to put the x-axis on the horizontal axis, as shown below. I only sketched the Ey and Hz components; you can sketch the Ez and Hy components similarly—Note, I already also posted the Quiz3 and 4 solutions on the website.
\[ t + kx + (1/2) \]

H\text{ component}  
G\text{ component}  

\[ \frac{\text{\#}}{\text{x}} \]
Solution to Exercise A

1. \(\text{max} = 2.00\,\text{cm}\) This indicates that there is a phase shift.

\[ E = 0 \]

\[ \mathbf{E}(z, t) = \mathbf{E}_0 \mathbf{e}_z \cos(\omega t - \beta z + \phi) \]

\[ \mathbf{H}(z, t) = \frac{\mathbf{J}_0}{\eta_0} \mathbf{e}_z \cos(\omega t - \beta z + \phi) \]

Calculate variables

\[ E = 0.0032 \times 10^6 \]

\[ E = 0.0032 \times 10^6 \]

\[ \omega = \sqrt{\omega^2 - \beta^2} = 2.03 \times 10^6 \]

\[ \alpha = \frac{\omega}{\beta} = 15.7 \]

\[ \beta = 0 \]

\[ \cos(-\beta z + \phi) = 1 \]

\[ -\beta z + \phi = 0 \]

\[ 0 - \beta z = \phi \]

\[ \phi < 90^\circ \]

\[ \eta = \eta_0 \]

\[ \eta = \frac{c_0}{\mu_0} \]

\[ M = 1 \]

Notes:

- If skin depth is \(d\), we are in lossless medium.