A solution to the wave equation is:
\[ f(z,t) = A \cos(kz – \omega t + \delta) \]

What is the speed of this wave?  
Which way is it moving?  
If \( \delta \) is small (and >0), is this wave “delayed” or “advanced”?  
What is the frequency?  
The angular frequency?  
The wavelength?  
The wave number?
A solution to the wave equation is:
\[ f(z,t) = \text{Re}[A \ e^{(kz - \omega t + \delta)}] \]

What is the speed of this wave?
Which way is it moving?
If \( \delta \) is small (and >0), is this wave “delayed” or “advanced”?
What is the frequency?
The angular frequency?
The wavelength?
The wave number?
A complex solution to the wave equation in 3D is:

\[ \tilde{f}(\mathbf{r}, t) = \tilde{A} e^{i (\mathbf{k} \cdot \mathbf{r} - \omega t)} \]

What is the speed of this wave?
Which way is it moving?
Why is there no \( \delta \)?

What is the frequency?
The angular frequency?
The wavelength?
The wave number?