

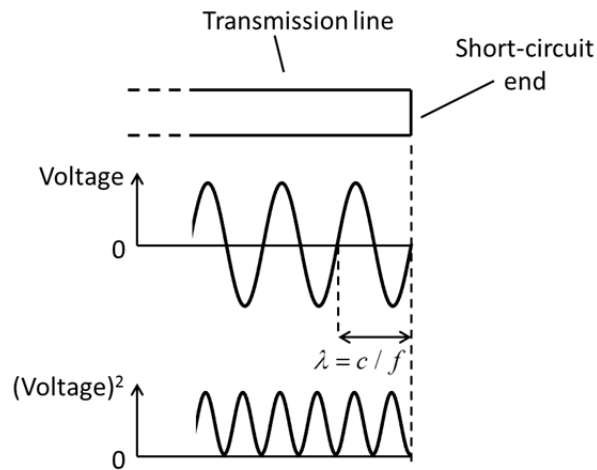
## Answers

### Main question

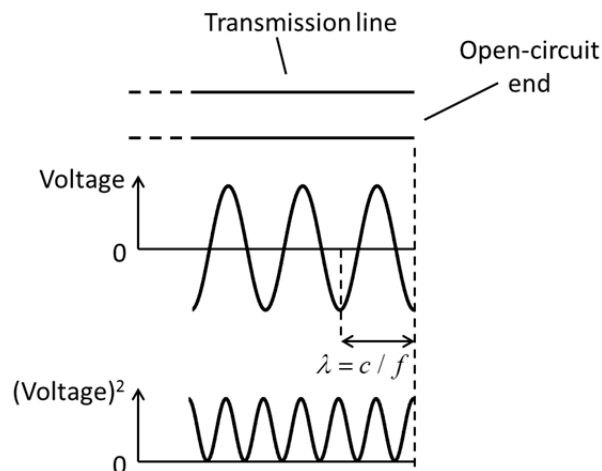
In both cases, of shorted or open ends on the line, we will form standing waves on the line.

a)

For case (i), the short circuit, there can be no voltage at the right end of the line, so that point will be a node (i.e., a zero) in the standing wave pattern. At any specific time, the voltage on the line will be a sine wave of wavelength  $\lambda = c/f$  with a zero at the right end. So, the voltage will look as sketched below, or possibly minus this.



For case (ii), the open circuit, the voltage is maximum at the right end of the line, so that point will be an antinode (a maximum) in the standing wave pattern. The result is similar to the above, but shifted to have the maximum at the end.



b)

The squares of the voltages are also sketched on the figures above for part (a).