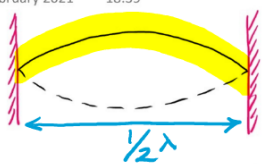


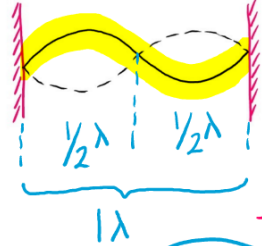
3 Stationary waves with strings

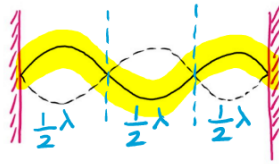
07 February 2021 19:18

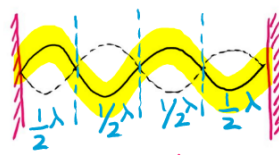
07 February 2021 18:39

$L = 2$ $v = 40 \text{ m/s}$

① 
 $\frac{1}{2}\lambda = 2$
 $\lambda = 4 \text{ m}$
 $f = \frac{40}{4} = 10 \text{ Hz}$

② 
 $1\lambda = 2$
 $\lambda = 2 \text{ m}$
 $f = \frac{40}{2} = 20 \text{ Hz}$

③ 
 $1.5\lambda = 2 \text{ m}$
 $\frac{3}{2}\lambda = 2$
 $\lambda = \frac{4}{3}$
 $f = \frac{40}{\frac{4}{3}} = 30 \text{ Hz}$

④ 
 $2\lambda = 2$
 $\lambda = 1 \text{ m}$
 $f = \frac{40}{1} = 40 \text{ Hz}$

fundamental freq.

first Overtone

Second Overtone

Third Overtone

Node to Node = $\frac{1}{2}\lambda$ *