



① path diff =  $n\lambda$   $n=0,1,2,\dots$  Constructive

$$y - 1.80 = 0 \quad \underline{y = 1.80 \text{ m}}$$

first const.

$$y - 1.80 = .6827$$

$$\underline{y = 2.482 \text{ m}}$$

second const.

$$f\lambda = 340$$

$$\lambda = 340/498$$

$$\lambda = .6827$$

path diff =  $(n + \frac{1}{2})\lambda$   $n=0,1,2,\dots$  destructive

$$y - 1.80 = \frac{1}{2}(.6827)$$

$$\underline{y = 2.141 \text{ m}}$$

$$f' = \frac{v_{\text{sound}}}{v_{\text{sound}} - v_{\text{source}}} f_0 = \frac{340}{340 - 2.10} 498 = 501.1 \text{ Hz}$$

$$f_A = 501.1$$

↑  
from speaker  
A

$$f_B = 498$$

↑  
from speaker  
B

$$f_{\text{beat}} = f_A - f_B = \underline{\underline{3.1 \text{ Hz}}}$$