

32. The frequency is  $f = 686$  Hz. At the beginning of the exercises and problems section in the textbook, we are told to assume  $v_{\text{sound}} = 343$  m/s unless told otherwise. If  $L$  is the length of the air-column (so that the water height is  $h = 1.00 \text{ m} - L$ ) then Eq. 18-41 leads to

$$L = \frac{nv}{4f} \implies h = 1.00 - L = \begin{cases} 0.875 \text{ m} & \text{for } n = 1 \\ 0.625 \text{ m} & \text{for } n = 3 \\ 0.375 \text{ m} & \text{for } n = 5 \\ 0.125 \text{ m} & \text{for } n = 7 \end{cases} .$$