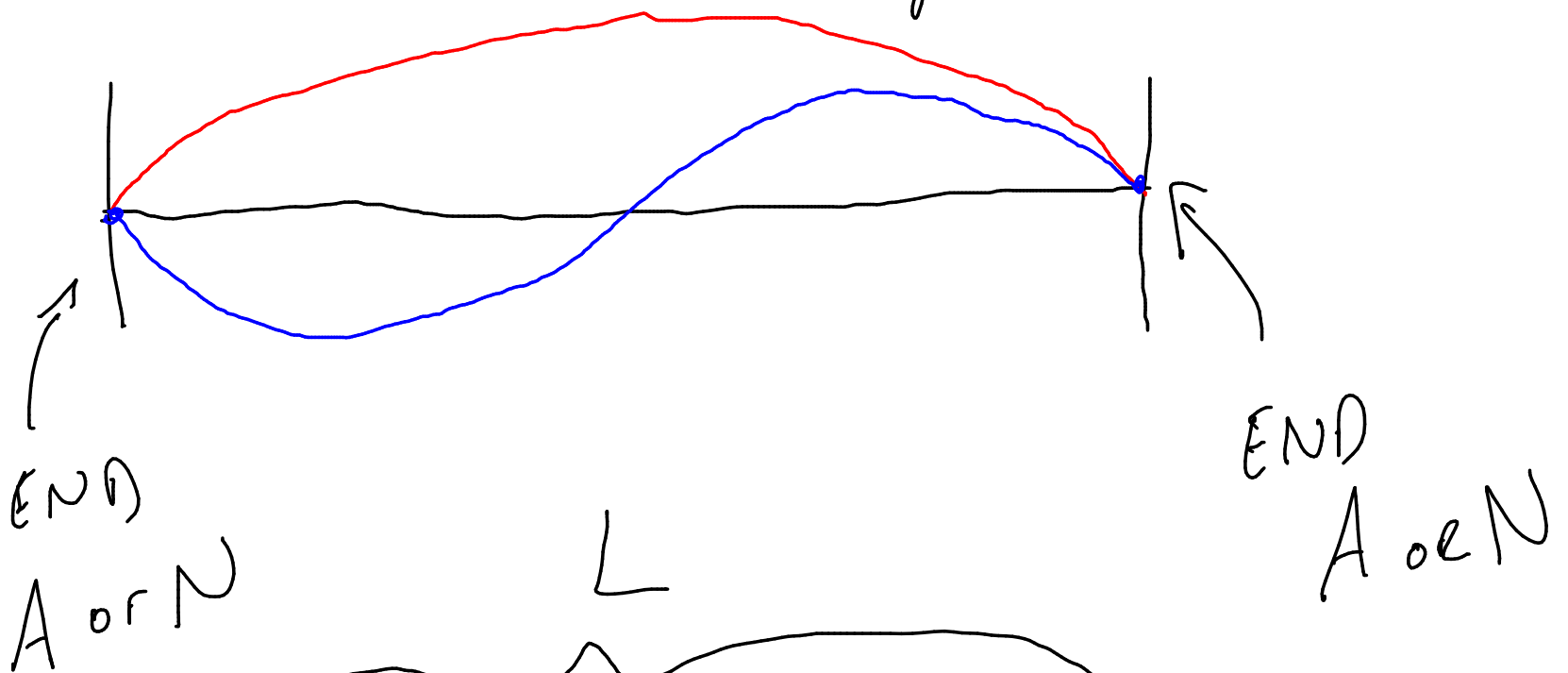


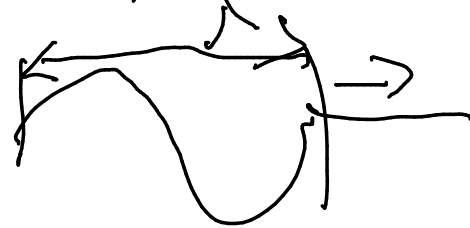
# Ch 1

## 1.5 Standing waves



N		A		N	$L = \frac{1}{2} \lambda$
N	A	N	A	N	$L = \frac{2}{2} \lambda$
N	A	N	A	N	$L = \frac{3}{2} \lambda$
					$\vdots$
					$L = \frac{n}{2} \lambda$

$$T = \frac{1}{f}$$



$$\lambda f = v$$

$$\lambda = v \frac{1}{f}$$

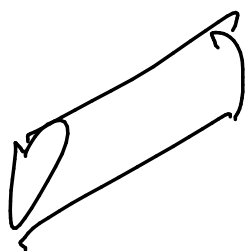
$$L = \frac{n}{2} \frac{v}{f} \Rightarrow \boxed{f = \frac{nv}{2L}}$$

$$N \quad A' \quad L = \frac{1}{4} \lambda$$

$$N \quad A \quad N \quad A' \quad L = \frac{3}{4} \lambda$$

$$N \quad A \quad N \quad A \quad N \quad A' \quad L = \frac{5}{4} \lambda$$

$$L = \frac{n'}{4} \lambda \quad \text{odd integer}$$



$$f = \frac{n'v}{4L}, \quad f = \frac{nv}{2L}$$

$\downarrow$   
 diff ends                  same ends