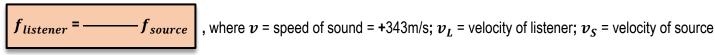
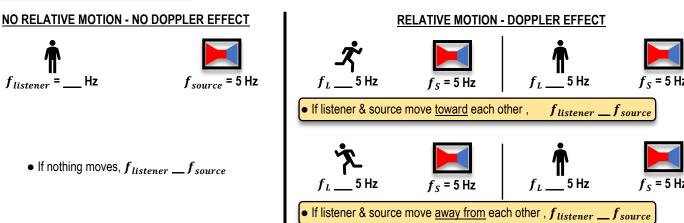
CONCEPT: THE DOPPLER EFFECT

- <u>Doppler Effect</u> = *shift* in the frequency YOU hear $(f_{listener} \text{ or } f_L)$ from the frequency of the sound source $(f_{sound} \text{ or } f_s)$.
 - It occurs when a sound <u>source</u> (e.g. siren) or <u>listener</u> (e.g. you) are _____ relative to each other.





<u>EXAMPLE</u>: The alarm of a car at rest produces sound waves of frequency 550 Hz. You're riding on a motorcycle, traveling directly towards it, and you hear an observed frequency of 600 Hz. How fast must you be traveling?





• The direction of positive is <u>ALWAYS</u> from *listener* to source.