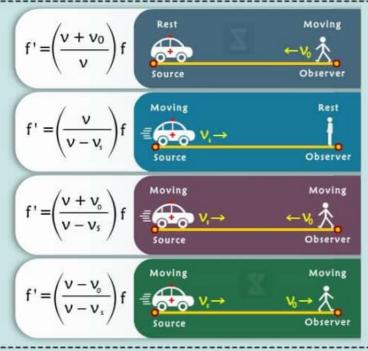
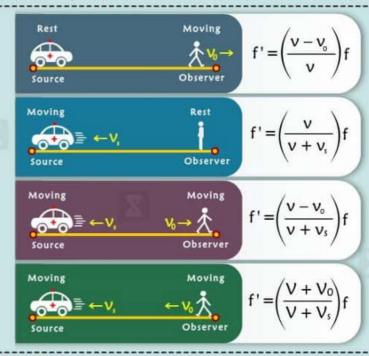




The shift in frequency of a wave emitted by a source moving relative to an observer as perceived by the observer: the shift is to higher frequencies when the source approaches and to lower frequencies when it recedes.

f = Original frequency $f' = Apparent frequency v_0 = Speed of observer$ v = Speed of sound in air





Shortcut Trick

Whenever source moves towards observer, then do substraction in denominator and vice-versa.

Whenever observer moves towards source. then do addition in numerator and vice-versa.

