

$$v_s = -24.6 \text{ m/s}$$

$$v_d = 0.0 \text{ m/s}$$

$$f_s = 523 \text{ Hz}$$

$$v = 343 \text{ m/s}$$

$$f_d = ?$$

$$f_d = f_s \left( \frac{v - v_d}{v - v_s} \right)$$

$$= 523 \left( \frac{343 - 0.0}{343 - (-24.6)} \right)$$

$$= 488 \text{ Hz}$$

$$f_s = 365 \text{ Hz}$$

$$f_d = ?$$

$$v = 343 \text{ m/s}$$

$$v_d = -25.0 \text{ m/s}$$

$$v_s = 0.0 \text{ m/s}$$

$$f_d = f_s \left( \frac{v - v_d}{v - v_s} \right)$$

$$= 365 \left( \frac{343 - (-25.0)}{343 - 0.0} \right)$$

$$= 391.6 \text{ Hz}$$

$$v_s = 24.6 \text{ m/s} \quad f_d = f_s \left( \frac{v - v_d}{v - v_s} \right) \quad (3)$$

$$v = 343 \text{ m/s}$$

$$f_s = 475 \text{ Hz} \quad = 475 \left( \frac{343 - (-24.6)}{343 - 24.6} \right)$$

$$f_d = ?$$

$$v_d = -24.6 \text{ m/s} \quad = 548.39 \text{ Hz}$$

$$v_d = 0.10 \text{ m/s} \quad f_d = f_s \left( \frac{v - v_d}{v - v_s} \right) \quad (4)$$

$$v_s = 9.20 \text{ m/s}$$

$$v = 1482 \text{ m/s} \quad = 3.5 \times 10^6 \left( \frac{1482 - 0.10}{1482 - 9.20} \right)$$

$$f_d = ?$$

$$f_s = 3.50 \text{ MHz} = 3.5 \times 10^6 \text{ Hz} \quad = 3.52 \times 10^6 \text{ Hz}$$

$$f_s = 262 \text{ Hz} \quad f_d = f_s \left( \frac{v - v_d}{v - v_s} \right) \quad (5)$$

$$v = 343 \text{ m/s}$$

$$f_d = 277 \text{ Hz} \quad 277 = 262 \left( \frac{343 - 0}{343 - v_s} \right)$$

$$v_d = 0.0 \text{ m/s}$$

$$v_s = ? \quad v_s = 18.57 \text{ m/s}$$