

Unit 6 Homework 1

$$23) v = 40 \text{ m/s} \quad \textcircled{A} \quad f_o = 320 \left(\frac{345}{345 - 40} \right) = 361.97 \text{ Hz}$$

$$f_s = 320 \text{ Hz} \quad f_o = 320 \left(\frac{345}{345 + 40} \right) = 286.75 \text{ Hz}$$

$$f_o = f_s \left(\frac{v + v_o}{v - v_s} \right) \quad 361.97 - 286.75 = \boxed{75.22 \text{ Hz}}$$

$$24) v_s = 172 \text{ m/s} \quad \textcircled{A} \quad f_o = f_s \left(\frac{v + v_o}{v - v_s} \right)$$

$$v = 344 \text{ m/s}$$

$$f = 5000 \text{ Hz}$$

$$f_o = 5000 \left(\frac{344}{344 - 172} \right)$$

$$\boxed{f_o = 10,000 \text{ Hz}}$$