

Str.186 41.6

Dane:

$$v = 10000\text{Hz}$$

$$v_0 = 120 \frac{\text{km}}{\text{h}} = 33 \frac{1}{3} \frac{\text{m}}{\text{s}}$$

$$v_z = 150 \frac{\text{km}}{\text{h}} = 41 \frac{2}{3} \frac{\text{m}}{\text{s}}$$

$$v = 330 \frac{\text{m}}{\text{s}}$$

$$\text{a) } v' = v \times \frac{v - v_0}{v - v_z}$$

$$v' = 10000\text{Hz} \times \frac{330 \frac{\text{m}}{\text{s}} - 33 \frac{1}{3} \frac{\text{m}}{\text{s}}}{330 \frac{\text{m}}{\text{s}} - 41 \frac{2}{3} \frac{\text{m}}{\text{s}}} = 10000\text{Hz} \times 1,028904 = 10289,04\text{Hz} \approx 10290\text{Hz}$$

b)

$$v_0 = 41 \frac{2}{3} \frac{\text{m}}{\text{s}}$$

$$v_z = 33 \frac{1}{3} \frac{\text{m}}{\text{s}}$$

$$v' = v \times \frac{v + v_0}{v + v_z}$$

$$v' = 10000\text{Hz} \times \frac{330 \frac{\text{m}}{\text{s}} + 41 \frac{2}{3} \frac{\text{m}}{\text{s}}}{330 \frac{\text{m}}{\text{s}} + 33 \frac{1}{3} \frac{\text{m}}{\text{s}}} = 10000\text{Hz} \times 1,0229376 = 10229,376\text{Hz} \approx 10230\text{Hz}$$