All questions refer to a power generator producing a voltage of

$$v(t) = 30 + 20\cos(60\pi t + 45°) + 10\cos(120\pi t + 45°)\ \text{V}$$

with an exiting current of

$$i(t) = 6 + 4\cos(60\pi t + 10°) + 2\cos(120\pi t + 120°)\ \text{A}$$

**Find:** The $V_{RMS}$ of the voltage waveform

**Find:** The $I_{RMS}$ of the voltage waveform

**Find:** The total average power delivered by the generator

**Find:** (Real-world) The device is supposed to deliver a pure DC source but it appears to have some contamination from nearby electronic devices. What is the percentage of the total output power contaminated by 60Hz?