Concept Question 9-1: Is the transfer function of a circuit always the same as its voltage gain?

No, it can be the ratio of any combination of voltages and currents, including

$$\text{Current gain:} \quad \mathbf{H}_I(\omega) = \frac{\mathbf{I}_{out}(\omega)}{\mathbf{I}_{in}(\omega)}, \tag{9.2a}$$

$$\text{Transfer impedance:} \quad \mathbf{H}_\mathbf{Z}(\omega) = \frac{\mathbf{V}_{out}(\omega)}{\mathbf{I}_{in}(\omega)}, \tag{9.2b}$$

and

$$\text{Transfer admittance:} \quad \mathbf{H}_\mathbf{Y}(\omega) = \frac{\mathbf{I}_{out}(\omega)}{\mathbf{V}_{in}(\omega)}. \tag{9.2c}$$