

Formeln umstellen

$$\frac{1}{f} = \frac{1}{g} + \frac{1}{b}$$

$$\textcircled{b}: \frac{1}{f} = \frac{1}{g} + \frac{1}{b} \quad | \cdot fgb$$

$$\Leftrightarrow gb = fb + fg \quad | -fb \quad (*)$$

$$\Leftrightarrow gb - fb = fg$$

$$\Leftrightarrow b(g-f) = fg \quad | : ()$$

$$\Leftrightarrow \underline{b = \frac{fg}{g-f}}$$

$$\textcircled{g}: \text{Mit } (*)$$

$$\Leftrightarrow gb - fg = fb \Leftrightarrow \underline{g = \frac{fb}{b-f}}$$

$$\textcircled{f}: \text{Mit } (*)$$

$$\Leftrightarrow f(b+g) = gb \Leftrightarrow \underline{f = \frac{gb}{b+g}}$$

Alternativ:

$$\frac{1}{f} = \frac{1}{g} + \frac{1}{b} \Leftrightarrow \frac{1}{f} = \frac{b}{gb} + \frac{g}{gb} \Leftrightarrow \frac{1}{f} = \frac{b+g}{gb} \quad | ()^{-1}$$

$$\Leftrightarrow \underline{f = \frac{gb}{g+b}}$$

Formeln umstellen

$$V = \frac{F}{g \cdot (s_1 - s_2)}$$

$$\Leftrightarrow V \cdot g (s_1 - s_2) = F$$

$$\Leftrightarrow Vg s_1 - Vg s_2 = F$$

$$\textcircled{s_1}: Vg s_1 = F - Vg s_2 \Leftrightarrow s_1 = \frac{F - Vg s_2}{Vg}$$

$$\textcircled{s_2}: Vg s_2 = Vg s_1 - F \Leftrightarrow s_2 = \frac{Vg s_1 - F}{Vg}$$

$$\textcircled{V}: Vg (s_1 - s_2) = F \Leftrightarrow V = \frac{F}{g (s_1 - s_2)}$$

$$\textcircled{g}: \Leftrightarrow g = \frac{F}{V (s_1 - s_2)}$$

Formeln umstellen

$$\frac{u}{J} = \frac{R_x \cdot R_i}{R_x + R_i}$$

$$\Leftrightarrow u(R_x + R_i) = R_x \cdot R_i \cdot J$$

$$\Leftrightarrow u R_x + u R_i = R_x R_i J \quad (*)$$

$$\textcircled{R_x}: \Leftrightarrow u R_x - R_i J \cdot R_x = -u R_i$$

$$\Leftrightarrow R_x (u - R_i J) = -u R_i \Leftrightarrow R_x = \frac{-u R_i}{u - R_i J} = \frac{u R_i}{R_i J - u}$$

$$\textcircled{R_i}: \Leftrightarrow u R_x = R_x J R_i - u R_i$$

$$\Leftrightarrow R_i (R_x J - u) = u R_x \Leftrightarrow R_i = \frac{u R_x}{R_x J - u}$$

$$\textcircled{u}: \quad \underline{u = \frac{R_x \cdot R_i}{R_x + R_i}}$$

$$\textcircled{J}: \quad \frac{u}{J} = \frac{R_x \cdot R_i}{R_x + R_i} \quad \left| \nearrow \right.$$

$$\Leftrightarrow u(R_x + R_i) = R_x R_i \cdot J \quad \left| : (R_x R_i) \right.$$

$$\Leftrightarrow \underline{J = \frac{u(R_x + R_i)}{R_x \cdot R_i}}$$