

$$D_1 = \begin{vmatrix} 0 & 1 & -1 & 0 & -1 \\ U_{q1} & 0 & R_3 & U_{q1} & 0 \\ U_{q2} & R_2 & R_3 & U_{q2} & R_2 \end{vmatrix} \begin{matrix} 0 & -1 \\ U_{q1} & 0 \\ U_{q2} & R_2 \end{matrix}$$

+ - +
- + -
+ - +

$$D_1 = 0(0R_3 - R_2R_3) - 1(-R_3U_{q2} + R_3U_{q1}) - 1(U_{q1}R_2 - 0U_{q2})$$

$$= U_{q1}R_3 + U_{q2}R_3 - U_{q1}R_2$$

$$D_1 = -28 \text{ V}\Omega + 96 \text{ V}\Omega = 68 \text{ V}\Omega$$

$$I_1 = \frac{D_1}{D}$$

$$I_1 = \frac{68 \text{ V}\Omega}{-38 \Omega^2} = -1,79 \text{ A}$$

$$D_2 = -80 \text{ V}\Omega \rightsquigarrow I_2 = \frac{D_2}{D} = 2,11 \text{ A}$$

$$D_3 = -12 \text{ V}\Omega \rightsquigarrow I_3 = \frac{D_3}{D} = 0,32 \text{ A}$$

Probe:

$$I_1 + I_2 - I_3 = 0$$

$$-1,79 + 2,11 - 0,32 = 0 \text{ v.A.}$$