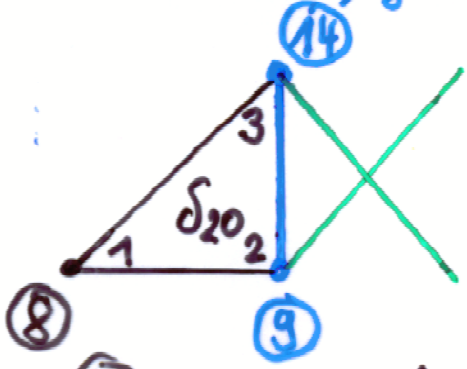
3. Einbau der natürlichen Randbedingungen:

a) Inhomogene RB 2. Art: $\int_{\Gamma_2} q_2 \varphi_j \, ds \xrightarrow{\oplus} f_j \to \hat{f}_h$

Anteile werden wieder elementeweise (rand-Kantenweise) generiert, z.B. ⑨ – ⑭



$\varphi_{14}(x) = \varphi_3^{(20)}(x) = \Phi_3(\xi_{20}(x))$

$\varphi_9(x) = \varphi_2^{(20)}(x) = \Phi_2(\xi_{20}(x))$

$$\int_{⑤}^{⑭} q_2 \varphi^{(9)} ds = \int_0^1 q_2(x_{\delta_{20}}(\xi)) \, \Phi_2(\xi) \, (x_{2,14} - x_{2,9}) \, d\xi$$

$\xrightarrow{\oplus} f_9 \to \hat{f}_h$

$$\int_{⑤}^{⑭} q_2 \varphi^{(14)} ds = \int_0^1 q_2(x_{\delta_{20}}(\xi)) \, \Phi_3(\xi) \, (x_{2,14} - x_{2,9}) \, d\xi$$

$\xrightarrow{\oplus} f_{14} \to \hat{f}_h$

MP

$$\approx q_2(x_{\delta_{20}}(\tfrac{1}{2})) \, \Phi_3(\tfrac{1}{2}) \, (x_{2,14} - x_{2,9})$$

Def. Menge $\mathbb{E}_{2,h} := \{e_2 \in \partial\delta_r \cap \Gamma_2 : \text{inhom. RB 2. Art}\}$ aller Elementkanten mit inhomogenen RB 2. Art:

```
FOR e_2 ∈ E_{2,h} DO
  FOR α ∈ A_{e_2} < A = {1,2,3} DO
    BEGIN
      * compute f_α^{(e_2)} := ∫_{σ_2} q_2(x) φ_2^{(e_2)}(x) ds = (1)
      * determine i = i(r, α) = i(e_2, α)
      * update f̂_i := f̂_i + f_α^{(e_2)}
    END
  ENDFOR
ENDFOR
```