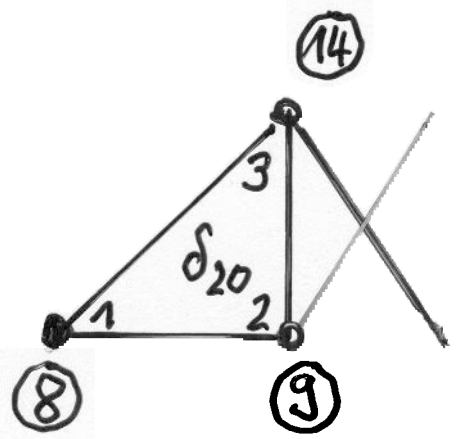


c) Incorporation of the Boundary Conditions:

■ Natural BC: $\Gamma_2 (\rightarrow \langle F_1, \cdot \rangle), \Gamma_3 (\rightarrow \langle F_1, \cdot \rangle, a(\cdot, \cdot))$

● inhomogeneous 2nd Kind BC: $\int_{\Gamma_2} q_2 p^{(k)} ds \xrightarrow{\oplus} f^{(k)} \rightarrow \hat{f}_h$

Again, the contribution to \hat{f}_h will be generated elementwise (boundary-edge-wise), e.g. ⑨ \rightarrow ⑭



$$p^{(14)}(x) \approx p^{(20,3)}(x) \approx p^{(3)}(\xi_{\delta_{20}}(x))$$

$$p^{(9)}(x) \approx p^{(20,2)}(x) = p^{(2)}(\xi_{\delta_{20}}(x))$$

$$\int_{\text{⑨}} q_2 p^{(9)} ds_x = \int_0^1 q_2(x^{(14)} + s(x^{(9)} - x^{(14)})) p^{(2)}(\dots) |x^{(9)} - x^{(14)}| ds \xrightarrow{\oplus} f \rightarrow \hat{f}_h$$

$$\int_{\text{⑨}} q_2 p^{(14)} ds_x = \int_0^1 q_2(x^{(14)} + s(x^{(9)} - x^{(14)})) p^{(3)}(\dots) |x^{(9)} - x^{(14)}| ds \xrightarrow{\oplus} f \rightarrow \hat{f}_h$$

$\stackrel{MP}{\approx} \underset{\text{Gauß 1}}{q_2(x^{(14)} + \frac{1}{2}(x^{(9)} - x^{(14)})} p^{(3)}(x^{(14)} + \frac{1}{2}(x^{(9)} - x^{(14)}) |x^{(9)} - x^{(14)}| = 1/2$

Define set $E_{2,h} := \{e_2 \subset \partial \delta_r \cap \Gamma_2 : \text{inhom. 2nd Kind BC}\}$
of all element edges with inhomogeneous 2nd Kind BC:

```

FOR e2 ∈ E2h DO
  FOR α ∈ A e2 ⊂ A = {1, 2, 3} DO
    * compute f^(e2,α) := ∫_{e2} q2(x) p^(e2,α)(x) ds = (↑)
    * determine i = i(r, α) = i(e2, α) r ← e2
    * update f^(i) := f^(i) + f^(e2,α)
  ENDFOR
ENDFOR

```