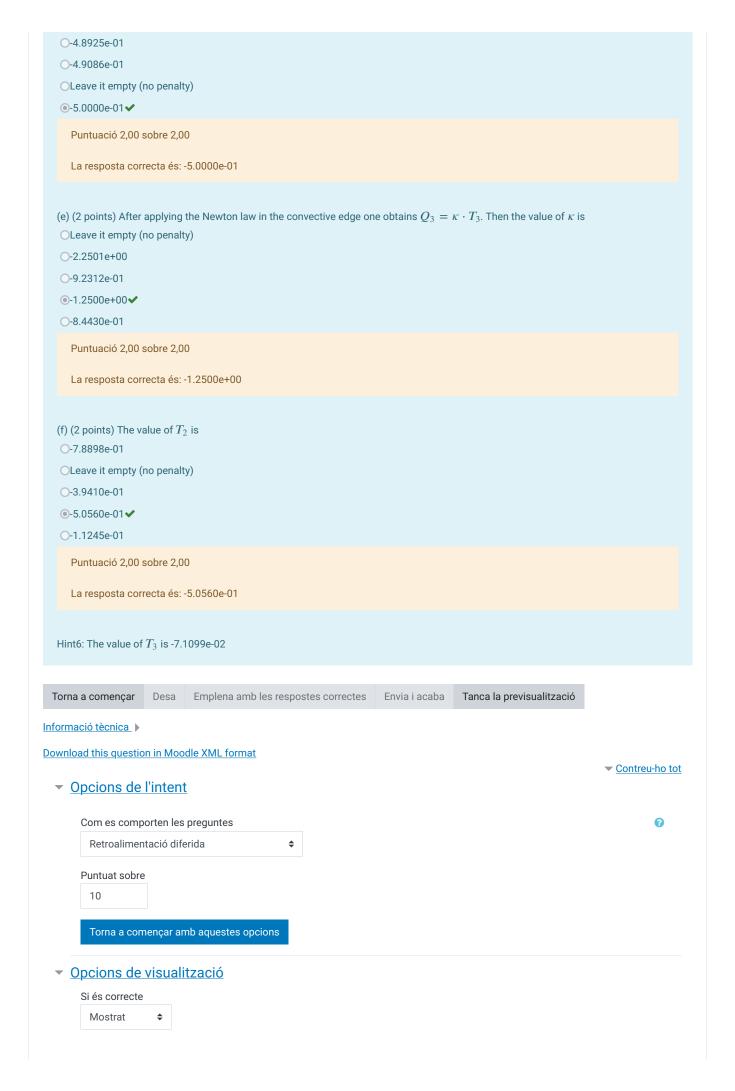
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Pregunta 1
Correcte
Puntuació 10,00 sobre 10,00
 Consider the Poisson heat diffusion on the domain shown in the figure meshed by two rectangular triangular finite elements with the
 local and global numbering plotted there. We consider that the thermal conductivity is k_c=1 and there is not internal heating ( f=0
 ). Also the temperature is T=0 on all the vertical left boundary, a linear negative flow q_n on the edge between nodes 1 and 2 is
 applied with q_n = -1 and q_n = 0 respectively, the domain is isolated (q_n = 0) on the edge between nodes 2 and 3, while a
 convection of coefficient \beta=1 and bulk temperature T_{\infty}=0 is present at the edge between nodes 3 and 4. Let a=3, b=4 the
 lengths of the edges shown in the picture. Then as we suppose that \Omega^2 is also a rectangular triangle, all the other lengths of the other
 edges are already determined.
 (a) (1 point) So, the length of the edge between nodes 3 and 4 is
  OLeave it empty (no penalty)
  ○5.6975e-01
  ●3.7500e+00✓
  O3 0136e+00
  O1.7994e+00
     Puntuació 1,00 sobre 1,00
     La resposta correcta és: 3.7500e+00
 Hint1: The length of the edge between nodes 4\ \mbox{and}\ 1 is 6.2500e+00
 (b) (1 points) The entry K^1_{2,3} of the local stiff matrix of \Omega^1 is
  OLeave it empty (no penalty)
  O-9.2489e-02
  ●-3.7500e-01✓
  O-1.7996e-01
  O-1.3793e-01
     Puntuació 1,00 sobre 1,00
     La resposta correcta és: -3.7500e-01
 Hint2: The entry K_{2,2}^1 is 1.0417e+00
 (c) (2 points) The entry of the global stiff matrix K_{3,3} is
  ○1.4069e-01
  01.1823e+00
  O2.5577e+00
  OLeave it empty (no penalty)
  ●1.4167e+00
     Puntuació 2,00 sobre 2,00
     La resposta correcta és: 1.4167e+00
 Hint3: The entry K_{2,2} is 1.0417e+00
 (d) (2 points) The value of the natural variable \mathcal{Q}_2 is
  O-9.4479e-01
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Previsualitza la pregunta: 1



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