Qu.5 *

The triangular section can be modelled on an orthogal grid by approximating the sloping face to a 'stair case'. In this case it is simpler to use the isothermal surfaces as a 'staircase' and the convective surface 'flat'.

Because the temperature distribution depends on <u>shape</u> (not on size) we can model any number of nodes – but a reasonable number is given using a 2mm spacing for the size given.

The resulting temperature distribution is found as below. See the spreadsheet to view actual cell formulae.

average = 36.2 °C

h = 75.0 W/m²K

a = 2.0 mm

l = 49.0 W/mK

0.003

50 mm

| | | |