Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student number\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*h*/4

1

2

4

*x*

*h*/4

1

2

*h/*4

3*h*/4

3

3

*h*/2

**Assignment 2**

Write down the shape function expressions of the elements shown in the figure. Deduce the expressions using the Lagrange interpolation polynomial.

**Solution template**

Derivation with the Lagrange interpolation polynomials is convenient in the one-dimensional case. The idea is to write a polynomial vanishing on some set of points followed by scaling for the value one at a certain point.In the first case of three-node element

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Considering the four-node element

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