Name: Lecture 1: Refresh of FEM

**Short questions (1% each, answer not longer than 50 words + figure – equation)**

1. How the internal and external energy balance is taken into account when deriving finite element method?

2. What are higher order finite elements? What are the differences from the perspective of approximation between higher and lower order elements?

3. How convergence rate of finite element method solution depends on used element order?

4. What is the negative jacobian error? How it depends on element order?

5. How can we control error in FEM. How can we refine the finite element mesh to minimise error?