# Homework #5
Modeling and Simulation
(Use Excel or MATLAB)

Both problems should be solved analytically based on the procedure described in the class lecture. Any solution based on SolidWorks Simulation is not acceptable.

1. For the beam shown below, use three beam elements to plot the deflection curve from $0 \leq x \leq 3048$ mm. Young's Modulus E = 200 GPa, Beam has a rectangular cross-section ($I = bh^3/12$) Width b = 50.8 mm and beam height h = 100 mm.

1000N   1000N

Fixed   914 mm   Fixed

914 mm

3048 mm
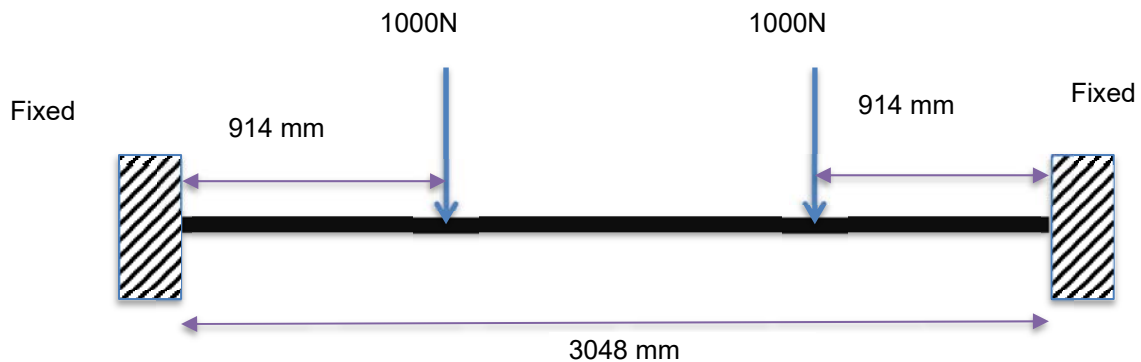
2. Use three beam elements to plot the beam deflection and slope plots if the load in the above problem is changed as shown below. All the beam parameters remain the same as problem 2.

q= 1.64 N/mm

Fixed   914 mm   Fixed

914 mm

3048 mm