

H e 4, 03/28/2019 D e: 04/10/2019

4

(0 0)

(24 *0.

*0.

()

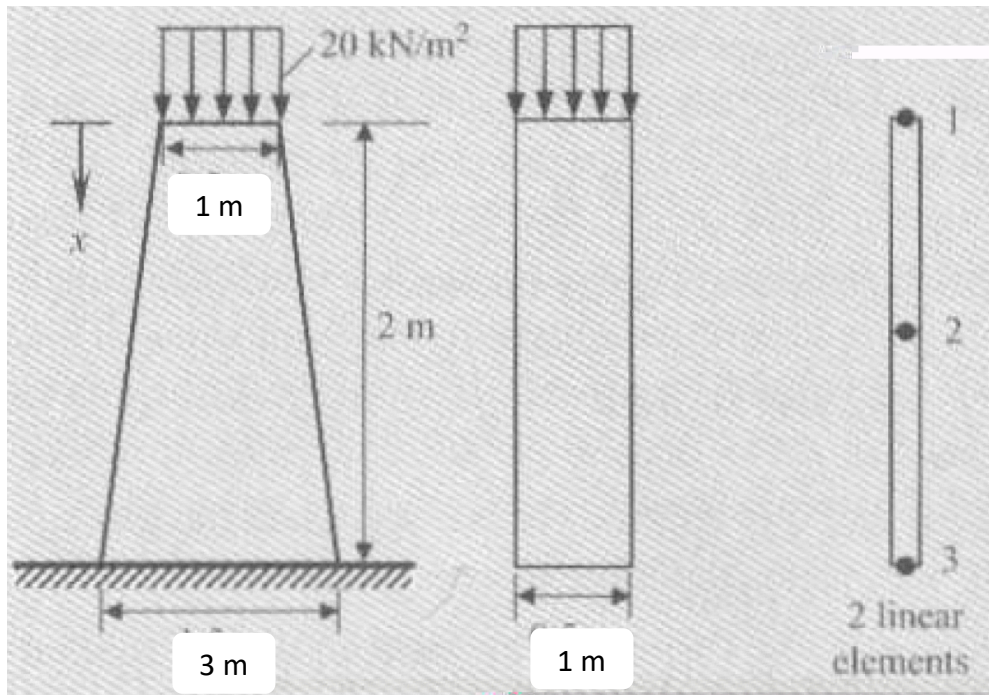
120%

1. (50%) C de ec ce e be HW1.

() C c ee e ff e a a de e e e a f ce a a a e
c de a f ea a a fc ec .

() A e be ee ee e ba eg ba ff e a a dg ba e e a f ce
a .C e e da d ace e .

() U e MATLAB a c a f e FEM e e ac a d ca ca ea
a a ba edf HW1.

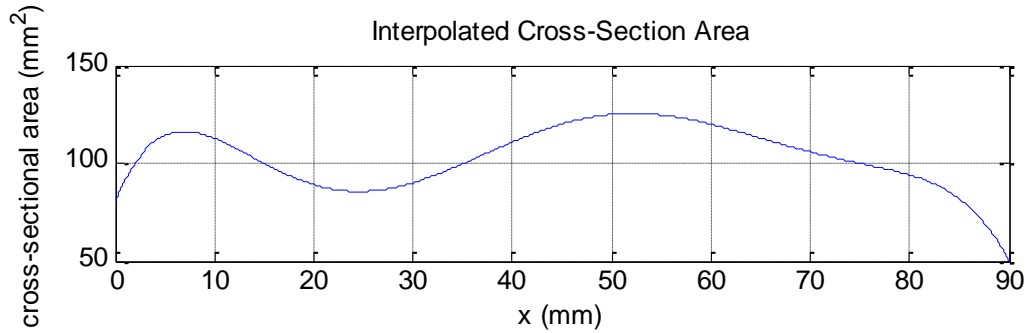
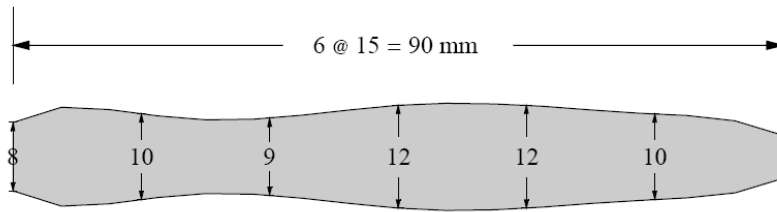


2. (30%) A fa a ba a c a c e f 10 a da a be e c f ea
efg e be .

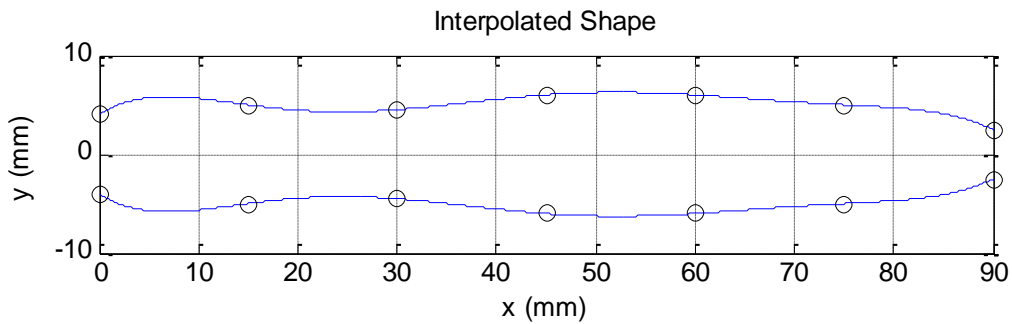
() C c e Lag a ge e a f c .

() U e e Lag a ge e a f c g e (a) a d de e e e a f a e a f c .

G a e e a a MATLAB . T e e a f c d a g a
e e e da a . A a e MATLAB g e be .



() Use the Lagrange shape functions (a) added to the shape functions for the Gaussian nodes in MATLAB. The shape functions are generated in MATLAB using the following code:



3. (10%) Evaluate the integral $\int_{-1}^1 (\xi^2 + \sin(\xi/2)) d\xi$ by using Gaussian quadrature.

4. (30%) Select the appropriate shape functions for a Gaussian quadrature with $n_{gp} = 3$.