

### ARCH 331: Practice Quiz 2

Note: No aids are allowed for part 1. One side of a letter sized paper with notes is allowed during part 2, along with a silent, **non-programmable** calculator. There are no reference charts for part 2.

Clearly show your work and answer.

Part 1) Worth 5 points (conceptual questions)

Part 2) Worth 45 points

(NOTE: The units, dimensions, loading, support types, locations and section for the truss and beam can and will be changed for the quiz!)

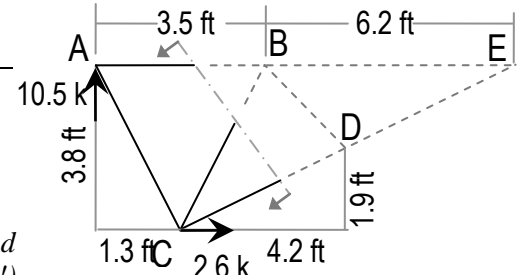


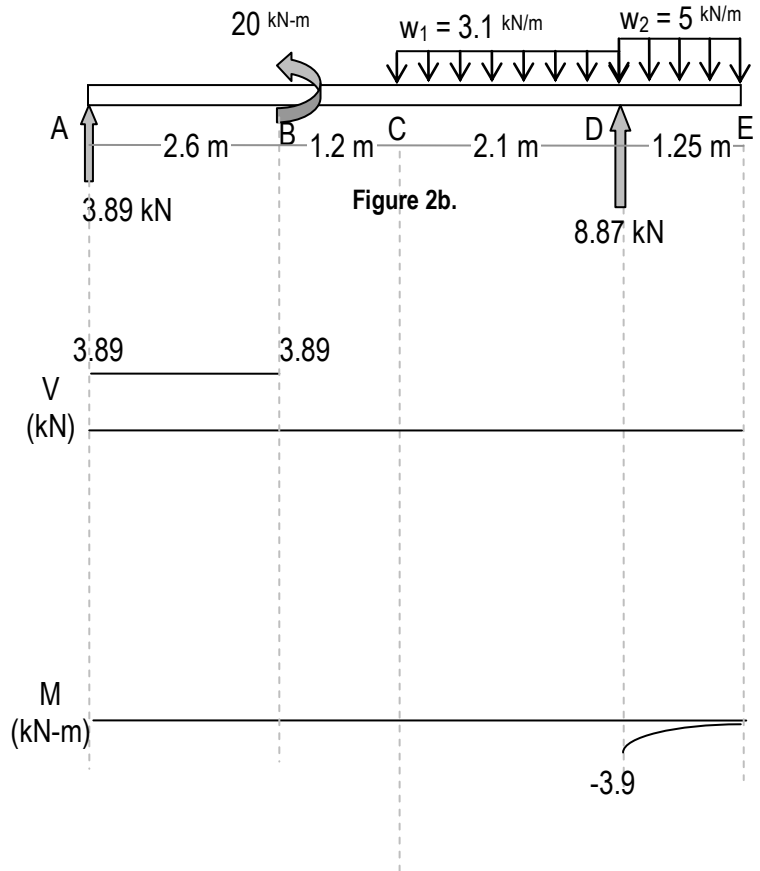
Figure 2a.

For the truss section with the shown geometry, loads find:

a) The member force (and sense) in CD [or BC...] using a *moment equation only*.

For the beam with the shown geometry, loads and support reactions, find:

- b) The completed shear diagram with all key values. Identify and locate the maximum shear necessary for design.
- c) The completed bending moment diagram with all key values. Identify and locate the maximum bending moment necessary for design.



**Disclaimer: Answers have NOT been painstakingly researched.**

Answers – Not provided on actual quiz!

- a)  $CD = 10.52 \text{ k (T)}$  [or  $BC = 17.14 \text{ k (C)}$ , or  $AB = 3.59 \text{ k (C)}$ ]
- b)  $V_{\max} = 6.25 \text{ kN at D}$  c)  $M_{\max} = 10.1 \text{ kN-m at B}$  ( $-2.8 \text{ kN-m at 1.26 m from C}$ )

