QUIZ 2
Fall 2015-16
(Wednesday November 25, 2015)
CIVE210 – STATICS
CLOSED BOOK, 1 HR 30 MN

Name: _____   **ID#:** _____   **Sec:** ____

NOTES

- 2 PROBLEMS– 11 PAGES.
- ALL YOUR <u>ANSWERS</u> SHOULD BE PROVIDED ON THE QUESTION SHEETS.
- **TWO <u>EXTRA</u> SHEETS ARE PROVIDED AT THE END.**
- **ASK FOR <u>ADDITIONAL</u> SHEETS IF YOU NEED MORE SPACE.**
- SOME ANSWERS MAY REQUIRE <u>MUCH LESS</u> THAN THE SPACE PROVIDED.
- *DO NOT* USE THE <u>BACK</u> OF THE SHEETS FOR ANSWERS.
- *DRAFT BOOKLET WILL BE PROVIDED; BUT DO NOT USE FOR ANSWERS.*
- BOTH QUESTION SHEETS AND DRAFT BOOKLET SHOULD BE <u>RETURNED</u>.
- <u>CHECK BOXES</u> ARE TO CONFIRM THAT YOU HAVE SOLVED A QUESTION.

YOUR COMMENT(S)

_ _

_ _

DO NOT WRITE IN THE SPACE BELOW

MY COMMENT(S)

_ _

_ _

YOUR GRADE

Problem I: _ _ _ /35
Problem II: _ _ _ /65
Bonus/Extras – Organization, Neatness, Special, …:   _ _ _

_____

TOTAL: /100

Problem I: *(35 points)*

12 Kips

4 Kip/ft

V

M ⟳ M

A   B   C
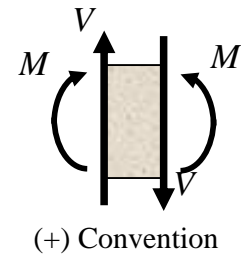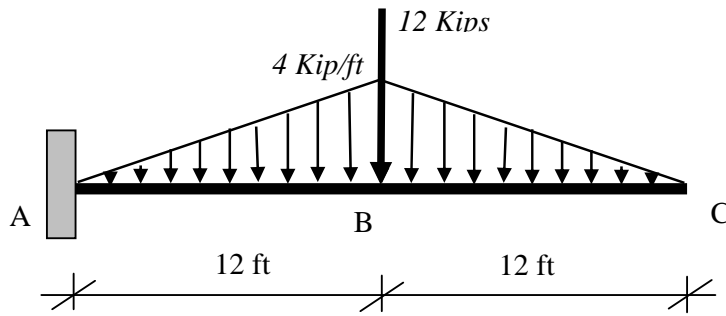
V

(+) Convention

12 ft   12 ft

Figure I

> *Tick Boxes to check that you solved all questions*

For the beam shown in <u>Figure I</u>:

1- Compute the reactions at the fixed support A. **(CHECK MORE THAN ONE TIME BEFORE YOU CONTINUE)** *(7 points)* ☐

2- Using sections, compute the shear force and bending moment at B. *(8 points)* ☐

3- Write the equations for shear force and bending moment in the beam, and draw the shear and moment diagrams (use the space provided below for the diagrams and draw neatly and to scale as much as you can). Show the important and necessary features and values on the diagrams. *(20 points)* ☐

<u>Calculations and/or Diagrams: (LEAVE THIS PAGE CLEAN FOR YOUR DIAGRAMS)</u>

A   B   C

A   B   C

Calculations and/or Diagrams (cont'd):

Calculations and/or Diagrams (cont'd):

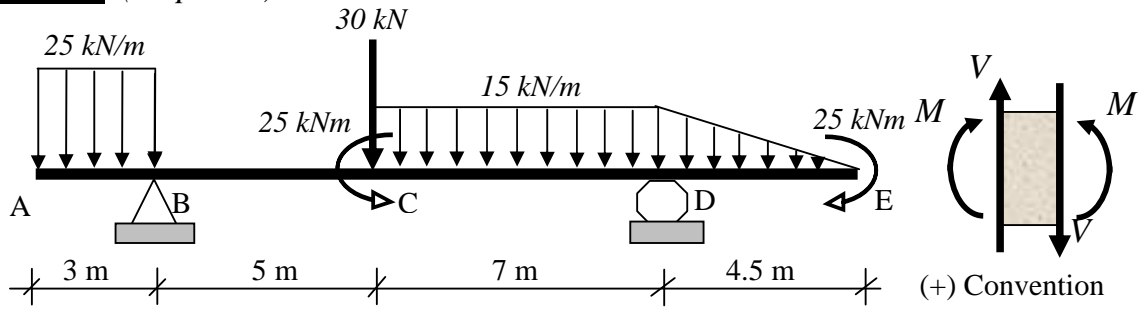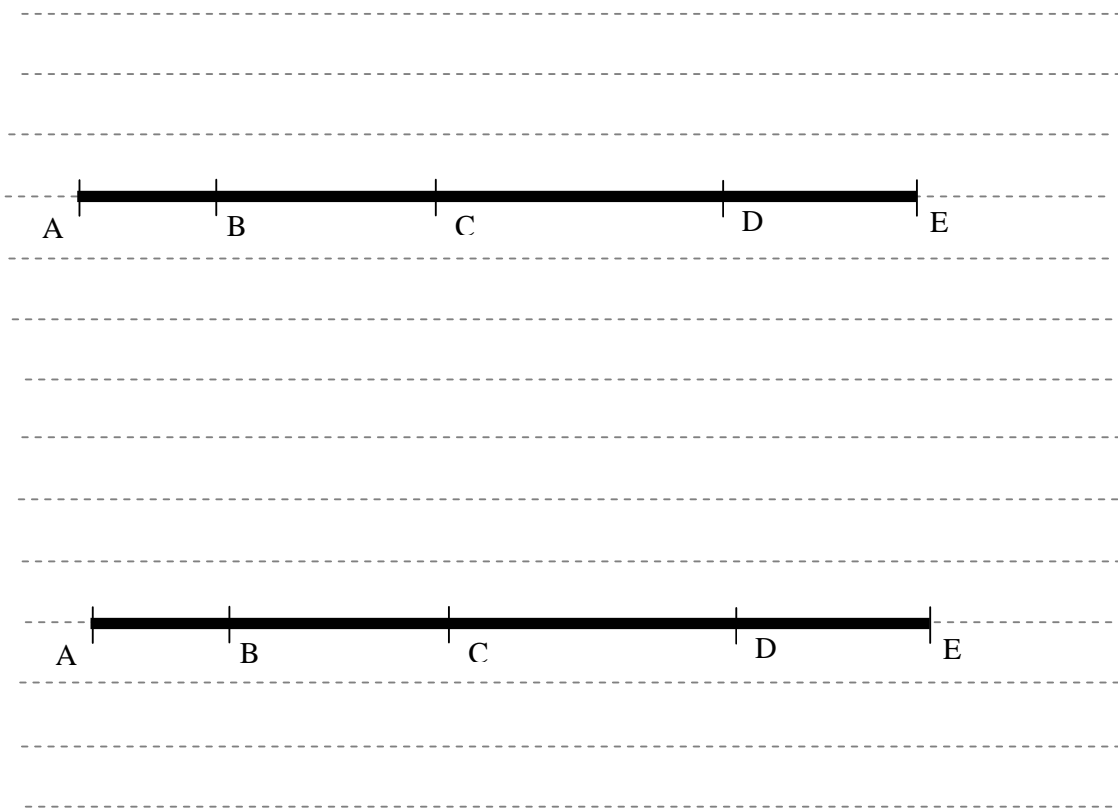## Problem II: *(65 points)*

Figure II

For the beam shown in Figure II:

1- Compute the reactions at supports B and D. (***CHECK MORE THAN ONE TIME BEFORE*** ☐
   YOU CONTINUE) *(10 points)*
2- Using sections, compute the shear force and bending moment at A, B, and E. *(10 points)* ☐
3- Using the method of integration (or areas), draw the shear force and bending moment
   diagrams for the beam (use the space provided below for the diagrams and draw neatly and to ☐
   scale as much as you can). Show the important and necessary features and values on the
   diagrams, and indicate the maximum positive and negative moments in the beam. *(35 points)*
4- **Without recalculating or redrawing**, explain how the reactions, and shear and moment ☐
   diagrams will change if the two moments of 25 kNm are not applied on the beam. *(10 points)*

Calculations and/or Diagrams: (LEAVE THIS PAGE CLEAN FOR YOUR DIAGRAMS)

5

Calculations and/or Diagrams (cont'd):

Calculations and/or Diagrams (cont'd):

Calculations and/or Diagrams (cont'd):

Calculations and/or Diagrams (cont'd):

EXTRA SHEET 1: Continued from page _____

Name: _____   **ID#:** _____

Calculations and/or Diagrams:

EXTRA SHEET 2: Continued from page _____

Name: _____   **ID#:** _____

Calculations and/or Diagrams: