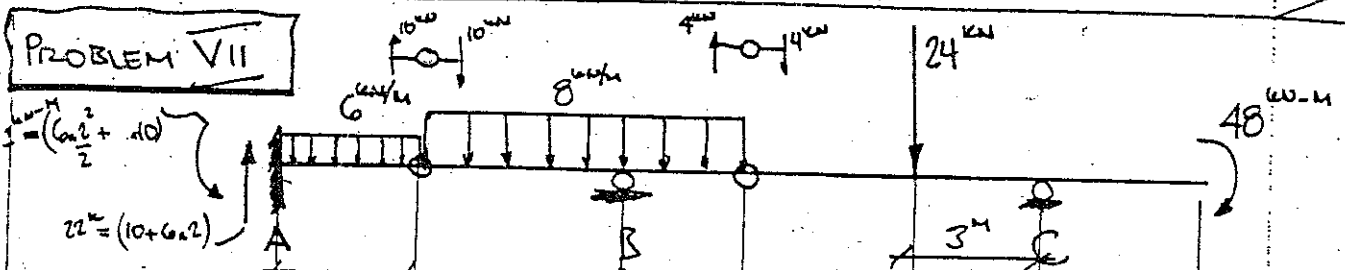
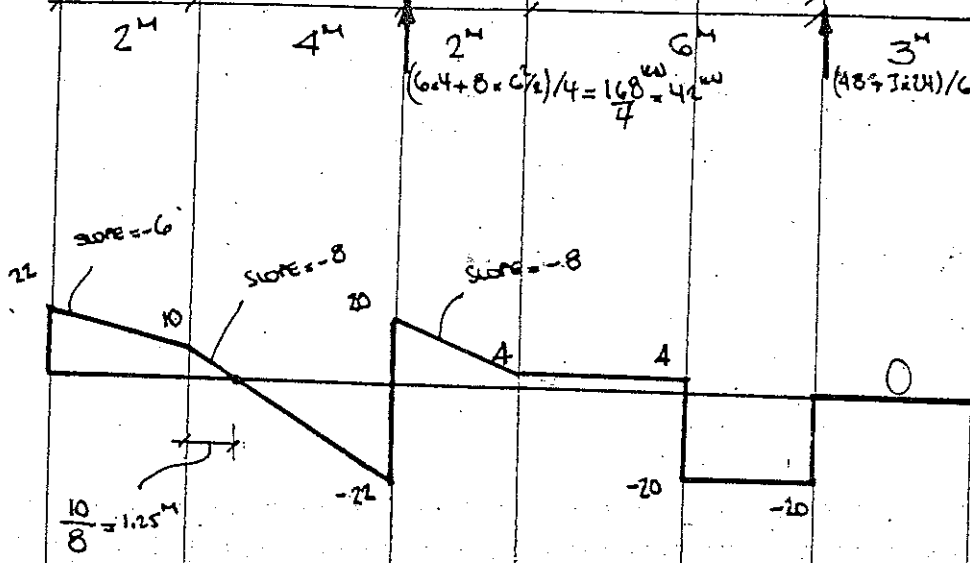


PROBLEM VII

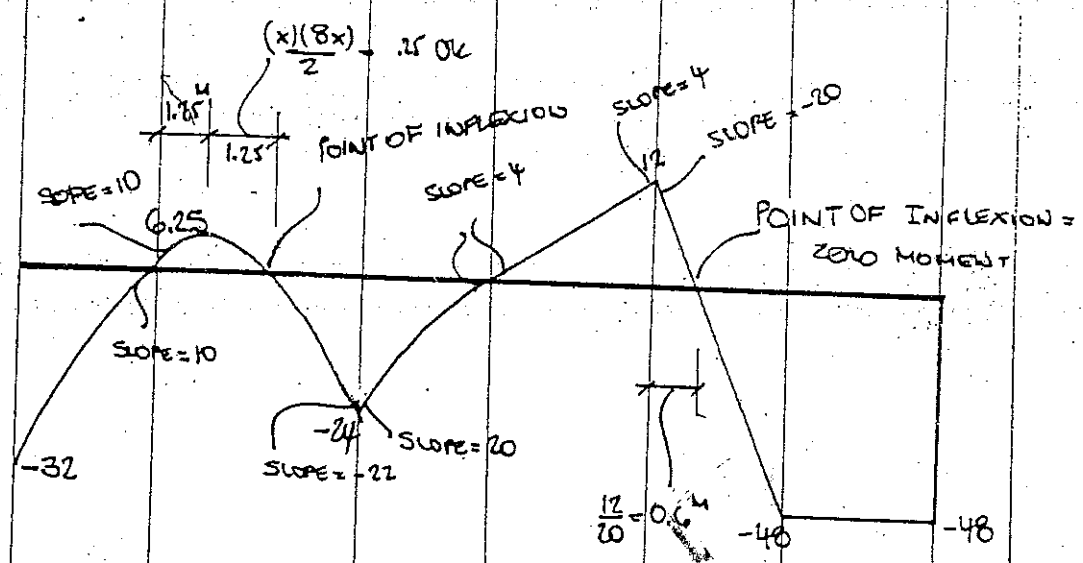
WED
NOV 13



SHEAR
DIAGRAM
(kN)



MOMENT
DIAGRAM
(kN-m)

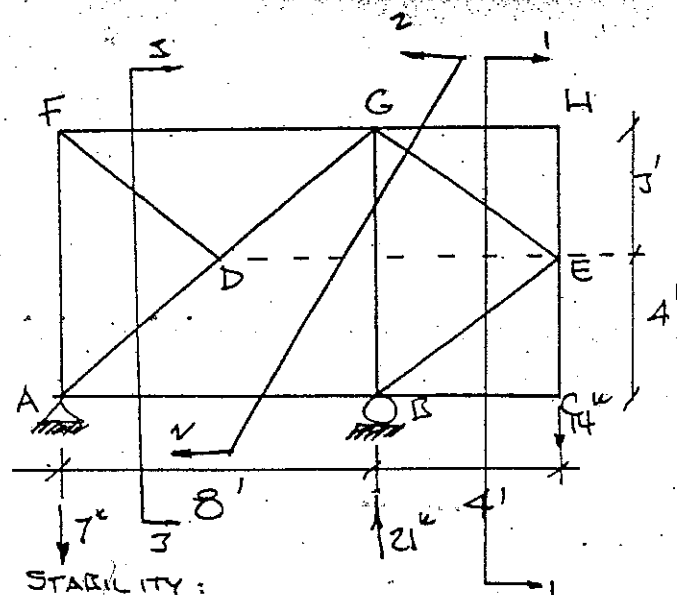


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PROBLEM V

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1 - DETERMINANCY & STABILITY:

3 EXTERNAL REACTIONS

1 IN X-, 2 IN Y-, NONCONCURRENT

NO OF JOINTS = 8 } $8 \cdot 2 = 13 + 3$ OK

NO REACTIONS = 3 } $16 = 16$

NO MEMBERS = 13

STRUCTURE DETERMINANT & STABLE

2 - JOINT METHOD:

FIND REACTIONS: $\sum M_A = 0 \rightarrow R_{BY} = 14 \cdot \frac{12}{8} = 21 \uparrow$

$\sum M_B = 0, R_{AY} = 14 \cdot \frac{4}{8} = 7 \downarrow$

JOINT C: $\sum F_x = 0, T_{CB} = 0$ $\sum F_y = 0, T_{EC} = 14^k (T)$ ①

JOINT H: $\sum F_x = 0, T_{GH} = 0$ $\sum F_y = 0, T_{EH} = 0$ ②

JOINT D: $\sum F_x = 0, T_{DF} = 0$ $\sum F_y = 0, T_{AD} = T_{DC}$ ③

JOINT F: $\sum F_x = 0, T_{FG} = 0$ $\sum F_y = 0, T_{AF} = 0$ ④

JOINT A: $\sum F_y = 0, T_{AD} = \frac{7}{\sqrt{113}} = 7, T_{AD} = T_{DG} = 10.63^k (T)$ ⑤

JOINT G: $\sum F_x = 0, T_{GD} = \frac{8}{\sqrt{113}} = T_{GE} = \frac{4}{5}, T_{GE} = 10^k (T)$ ⑥

JOINT B: $\sum F_y = 0, T_{GB} + 21 + T_{GE} \cdot \frac{\sqrt{2}}{2} = 0$ $T_{GE} = -11.31 = 11.31^k (C) = T_{BE}$ ⑦

3. SECTION METHOD:

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SECTION 1-1: KNOWING $T_{GH} = 0, T_{AC} = 0$

$$\Sigma M_B = 0 \rightarrow \text{FIND } T_{GE}$$

$$\Sigma M_C = 0 \rightarrow \text{FIND } T_{BE}$$

$$\text{CHECK } \Sigma F_y = 0$$

SECTION 2-2: KNOWING $T_{GH} = 0, T_{GE}$ FROM ABOVE

$$\Sigma M_G = 0 \rightarrow \text{FIND } T_{AB}$$

$$\Sigma F_y = 0 \rightarrow \text{FIND } T_{GD}$$

SECTION 3-3: KNOWING $T_{FG} = 0, T_{ED} = 0$

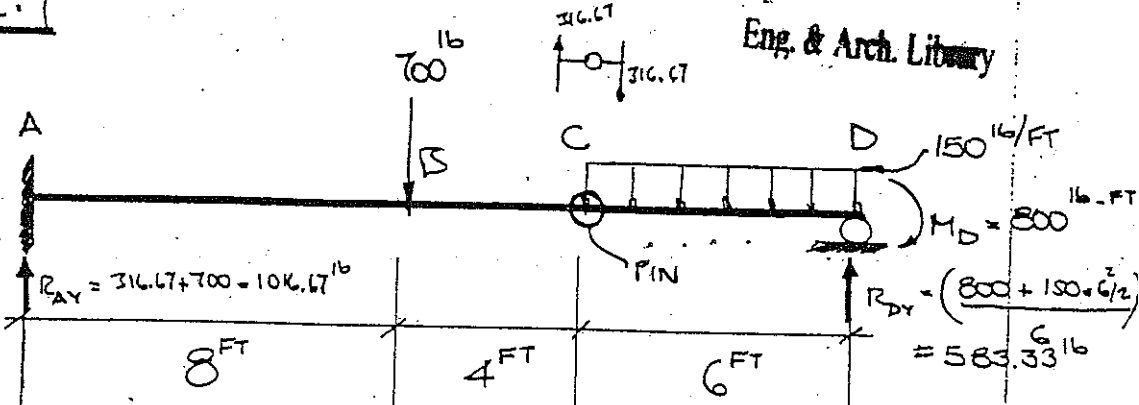
$$\Sigma F_y = 0 \rightarrow \text{FIND } T_{AD}$$

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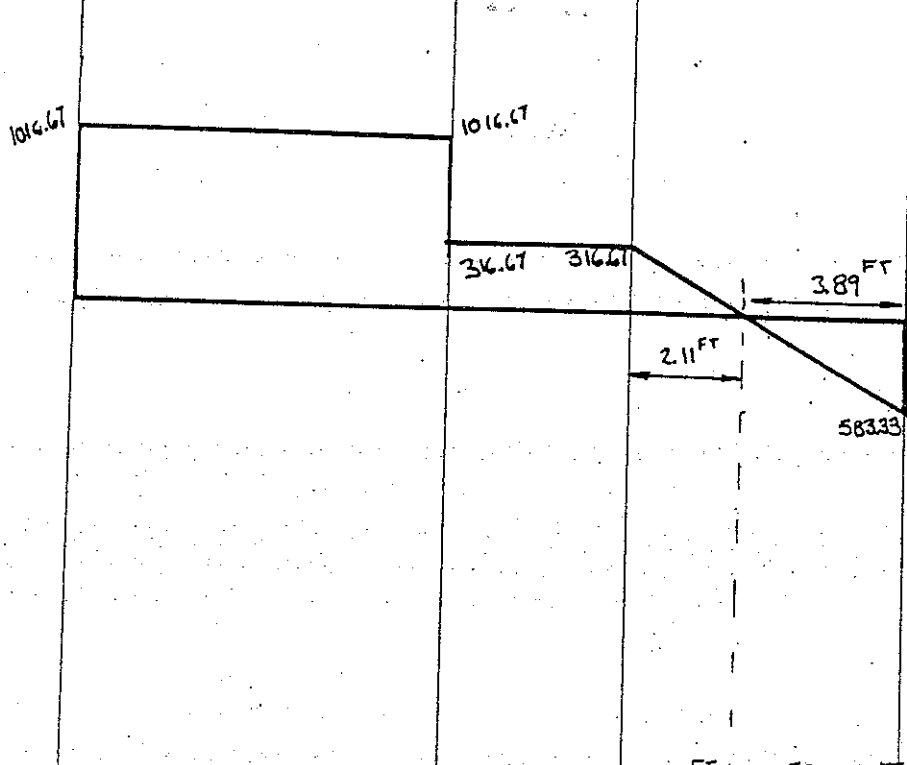
PROBLEM VIII:

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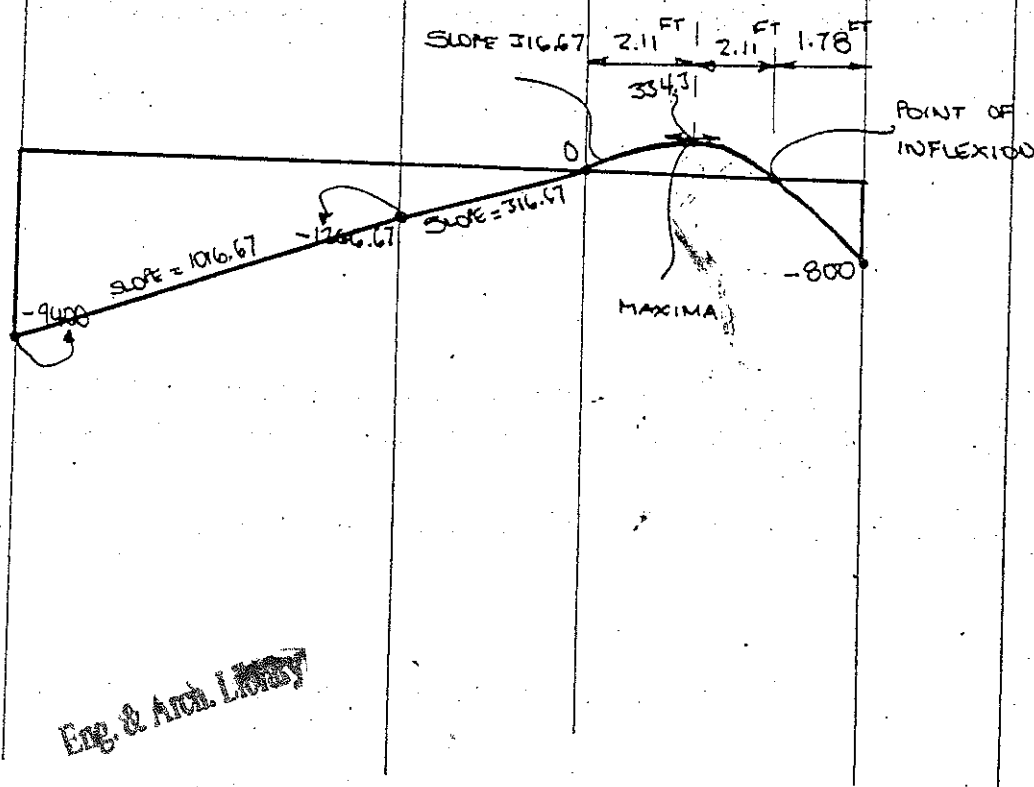
$$M_A = 316.67 \cdot 18 + 700 \cdot 8 = 9400 \text{ lb-ft}$$



SHEAR DIAGRAM (lb)



MOMENT DIAGRAM (lb-ft)



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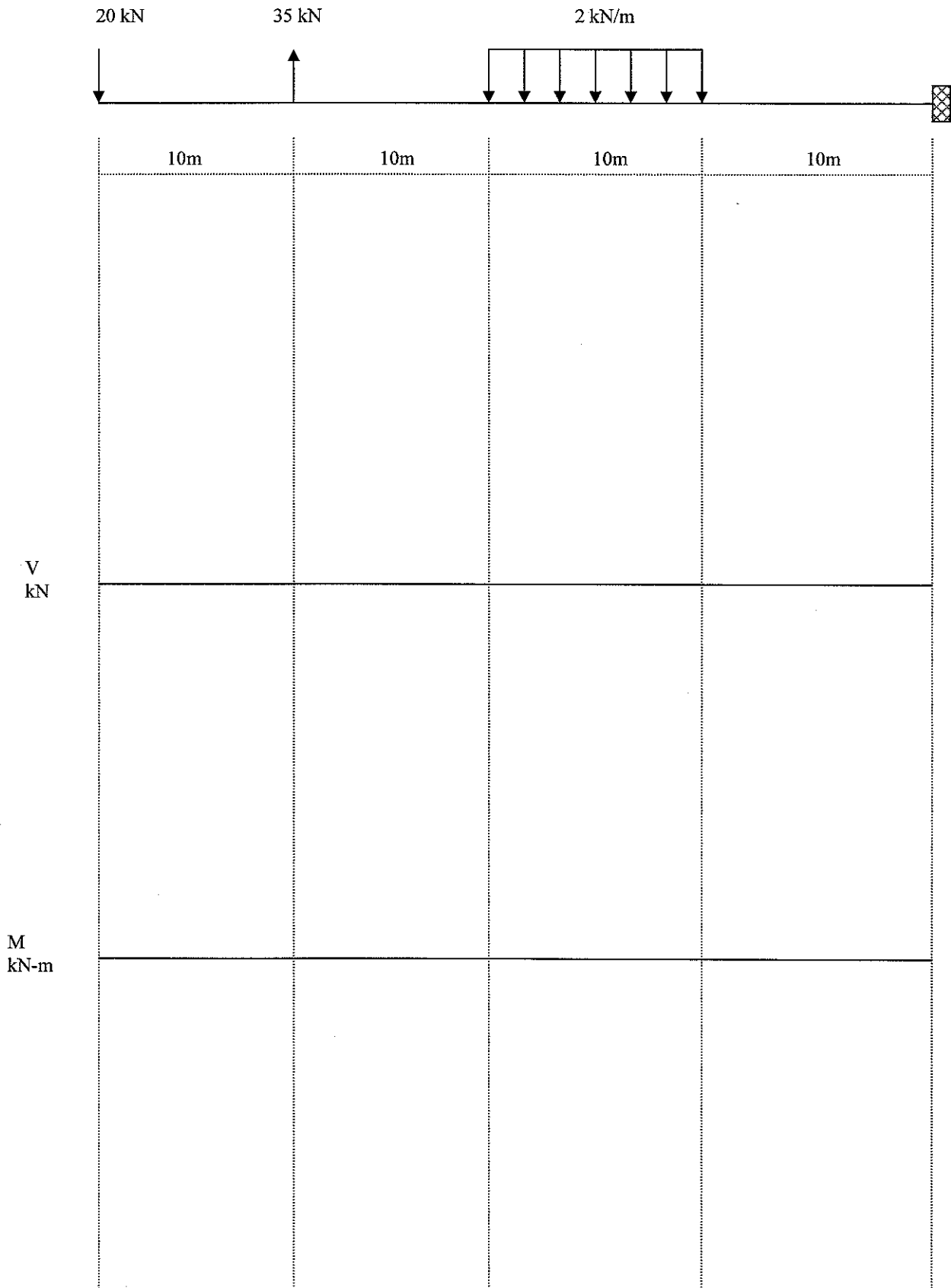
CIVE 210	Statics	Exam # 2	Sat Dec 17, 05	1/1	
<table border="1" style="margin: auto; text-align: center;"><tr><td>1 / 2 Hour Exam, Closed Books</td></tr></table>					1 / 2 Hour Exam, Closed Books
1 / 2 Hour Exam, Closed Books					

Problem #1: (25%)

For the one dimensional frame supported at the right end only and shown in the attached sheet:

- 1- Briefly study stability and determinacy (3 points)
- 2- Compute the reactions at the full fixity located at the right end of the frame (4 points)
- 3- Draw **to scale** the shear diagram on the attached sheet, below the frame system (9 points). **Indicate relevant information to key points** including slopes, ordinates, location of 0 shear, type of functions, minimum-maximum and other relevant information to key points.
- 4- Draw **to scale** the moment diagram on the attached sheet, below the frame system (9 points). **Indicate relevant information to key points** including slopes, ordinates, location of 0 moment, type of functions, minimum-maximum and other relevant information to key points.

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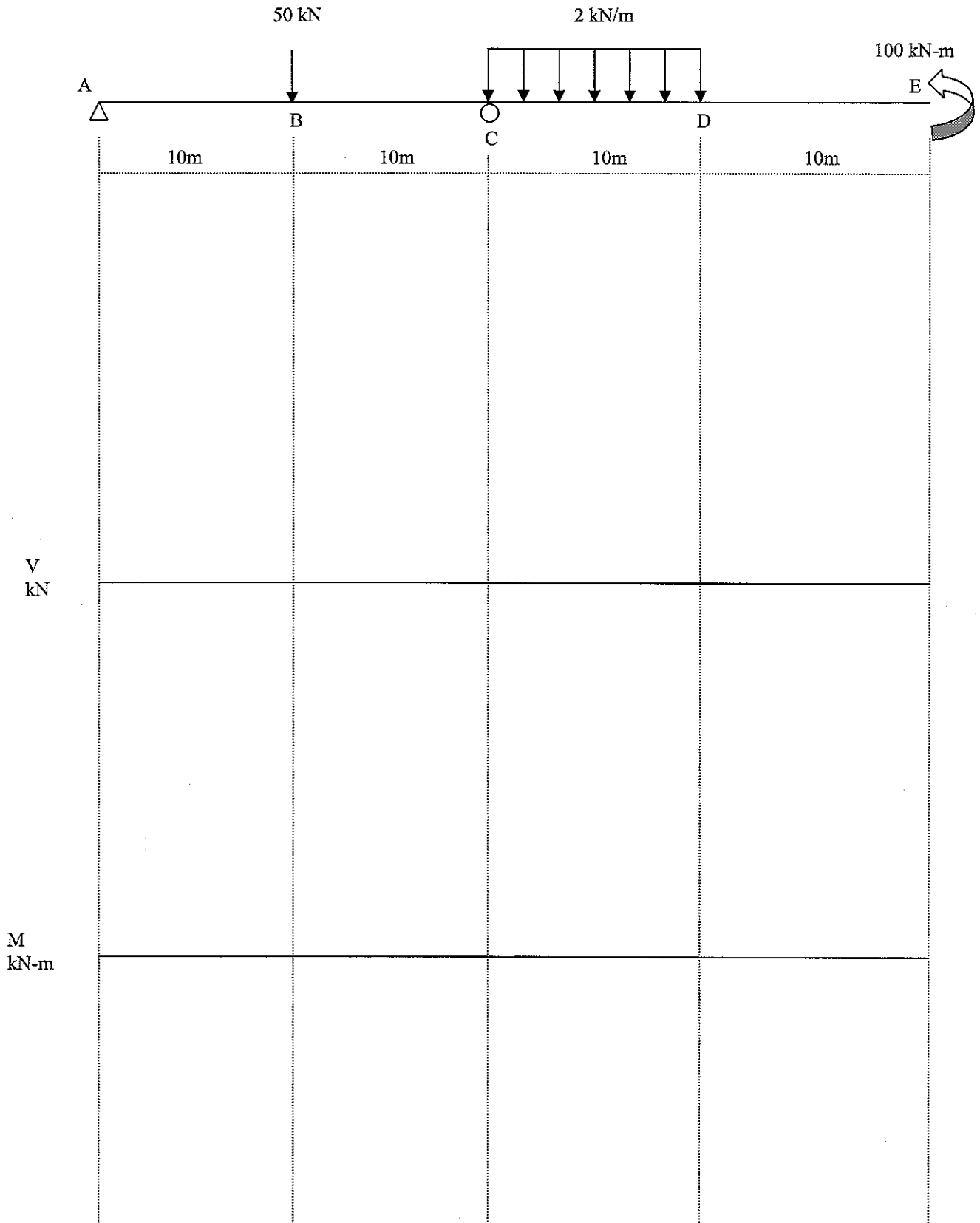
CIVE 210	Statics	Exam # 2	Fri Apr 5, 06	1/1	
<table border="1" style="margin: auto; text-align: center;"><tr><td>3/4 Hour Exam, Closed Books</td></tr></table>					3/4 Hour Exam, Closed Books
3/4 Hour Exam, Closed Books					

Problem #1: (25%)

For the one dimensional frame hinge supported at A, roller supported at C, with a concentrated load 50 kN at B, concentrated moment 100 kN-m at E and a 2 kN/m uniform load between C and D as shown in the attached sheet:

- 1- Briefly study stability and determinacy (3 points)
- 2- Compute the reactions at the hinge support at A and roller support @ B (4 points)
- 3- Draw to scale the shear diagram on the attached sheet, below the frame system (9 points). **Indicate relevant information to key points** including slopes, ordinates, location of 0 shear, type of functions, minimum-maximum and other relevant information to key points.
- 4- Draw to scale the moment diagram on the attached sheet, below the frame system (9 points). **Indicate relevant information to key points** including slopes, ordinates, location of 0 moment, type of functions, minimum-maximum and other relevant information to key points.

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