Term 1 (22-23) Mid - Theory of Structures (2)A

لطلبة الفرقة الثانية مدنى - CIV 211 - نظرية الانشاءات (2)أ
لطلبة المستويات - CIV 301 -(نظرية الانشاءات (3

* Required

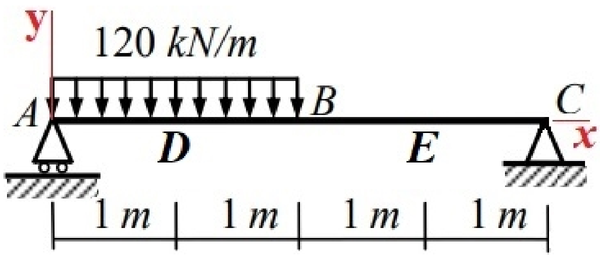
* This form will record your name, please fill your name.

1

For the shown beam, use the double integration:

The deflection at D is *
(1 Point)

$EI = 4 \times 10^4 \ kN.m^2$

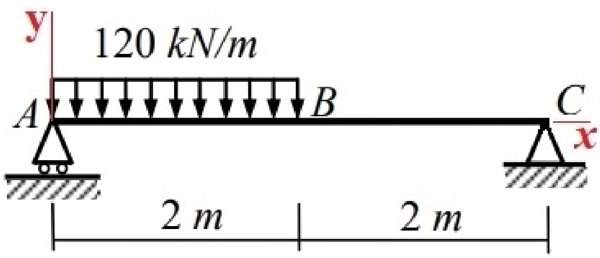


- 2.0 mm Downward
- 2.5 mm Downward
- 3.1 mm Downward
- 3.9 mm Downward
- 4.5 mm Downward

2

For the shown beam, use the double integration:

EI y = * (1 Point)

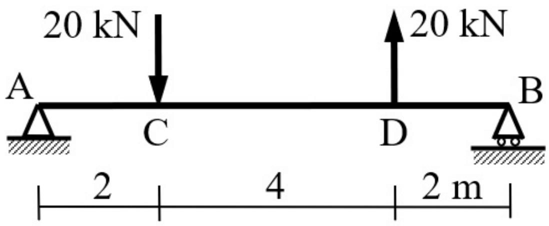


- $30x^3 + 5x^4 - 5(x-2)^4 + C_1x + C_2$
- $20x^3 - 5x^4 + 5(x-2)^4 + C_1x + C_2$
- $30x^3 - 10x^4 + 10(x-2)^4 + C_1x + C_2$
- $30x^3 - 5x^4 + 5(x-2)^4 + C_1x + C_2$
- $30x^3 - 5x^4 + C_1x + C_2$

3

For the shown beam, use the moment-area method:

The slope of the tangent of the elastic curve at point C, theta C is: * (1 Point)

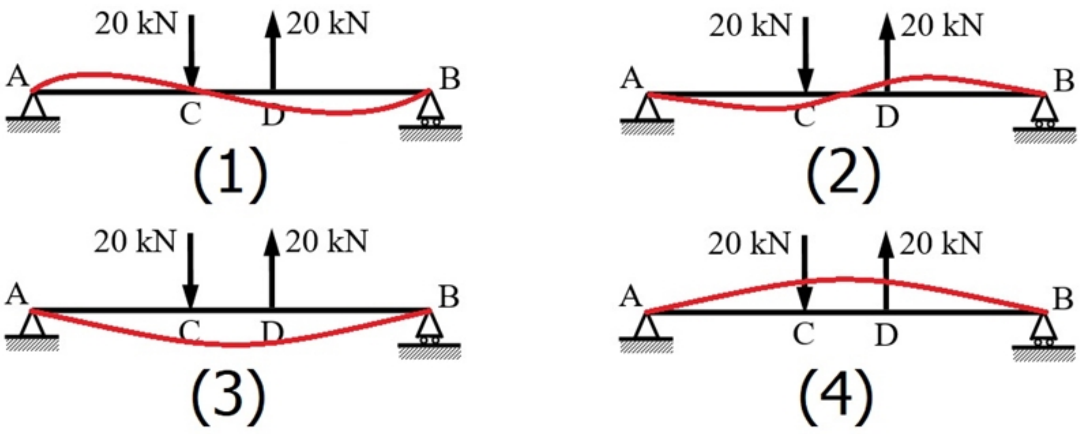


$EI = 2.5 \times 10^3 \quad kN.m^2$

- 0.0032 rad Clockwise
- 0.0064 rad Anticlockwise
- 0.0016 rad Clockwise
- 0.0016 degree Anticlockwise
- zero

4

The nearest elastic curve of the shown beam is: * (1 Point)

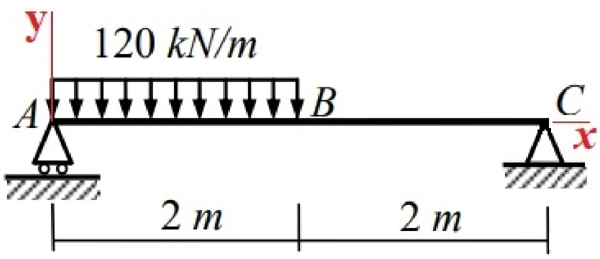


- ◯ 3
- ◯ 2
- ◯ 4
- ◯ 1

5

For the shown beam, use the double integration:

The bending moment in the last part BC is: * (1 Point)



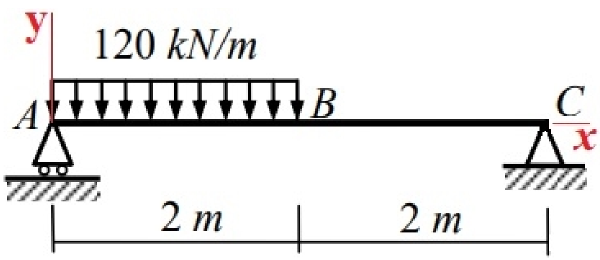
- $120x - 60x^2 + 60(x-2)^2$
- $180x + 60x^2 - 60(x-2)^2$
- $180x - 60x^2 + 60(x-2)^2$
- $180x - 120x^2 + 120(x-2)^2$
- $180x - 60x^2$

6

For the shown beam, use the double integration:

The deflection at B is * (1 Point)

$EI = 4 \times 10^4 \ kN.m^2$

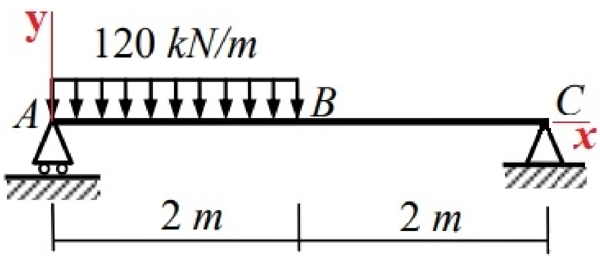


- 10 mm Downward
- 15.5 mm Downward
- 5 mm Downward
- 10 mm UPward
- 1.2 mm Downward

7

For the shown beam, use the double integration:

The vertical reaction at the hinged support is: *
(1 Point)

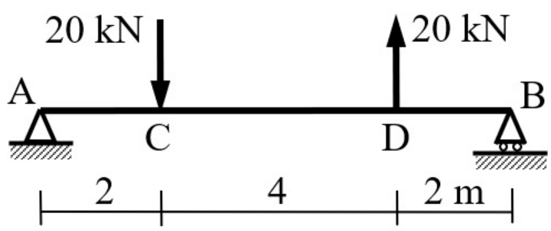


- 180 kN Upward
- 40 kN Upward
- 80 kN Upward
- 60 kN Upward
- 120 kN Upward

8

For the shown beam, use the moment-area method:

The deviation of B relative to the tangent of the elastic curve at A, tB/A is: *
(1 Point)



$EI = 2.5 \times 10^3 \quad kN.m^2$

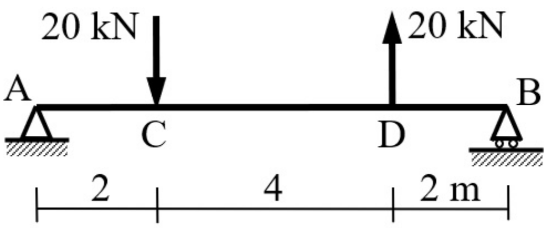
- 0.016 m
- 0.032 m
- zero
- 0.064 m
- -0.032 m

9

For the shown beam, use the moment-area method:

The maximum downward deflection is at a distance = ... from A: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$

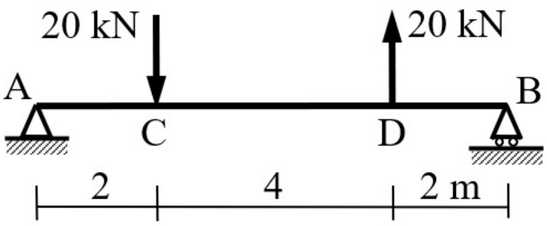


- 4 m
- 3 m
- 2 m
- 3.5 m
- 2.5 m

10

For the shown beam, use the moment-area method:

The bending moment at D is: * (1 Point)

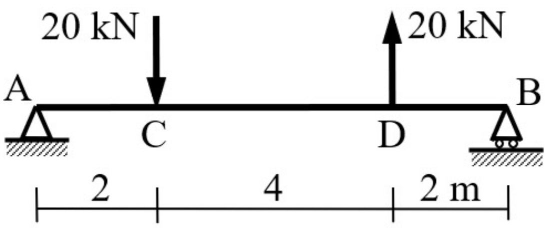


- 20 kN.m
- -10 kN.m
- 40 kN.m
- zero
- -20 kN.m

11

For the shown beam, use the moment-area method:

The bending moment at C is:
* (1 Point)



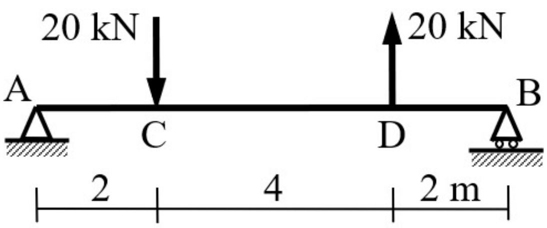
- zero
- -10 kN.m
- 10 kN.m
- 40 kN.m
- 20 kN.m

12

For the shown beam, use the moment-area method:

The deviation of D relative to the tangent of the elastic curve at A, tD/A is: *
(1 Point)

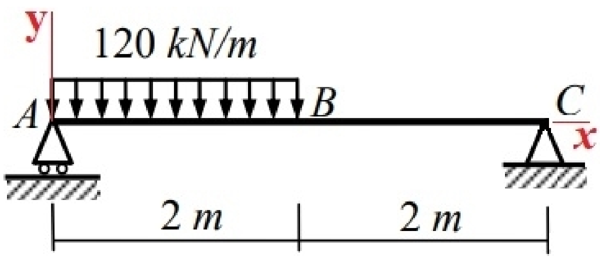
$EI = 2.5 \times 10^3 \quad kN.m^2$



- 0.024 m
- 0.016 m
- -0.032 m
- 0.059 m
- zero

13

For the shown beam, use the double integration:

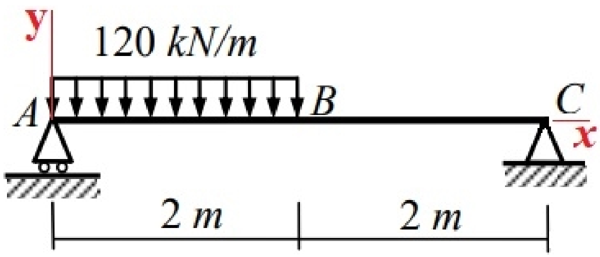


C1 is: * (1 Point)

- $C_1 = -180$
- $C_1 = -60$
- $C_1 = 0$
- $C_1 = 20$
- $C_1 = -20$

14

For the shown beam, use the double integration:



C2 is: * (1 Point)

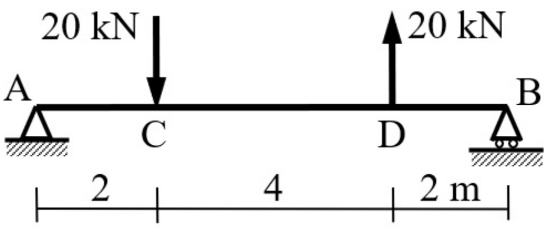
- $C_2 = -60$
- $C_2 = 90$
- $C_2 = 20$
- $C_2=0$
- $C_2 = -20$

15

For the shown beam, use the moment-area method:

The deviation of C relative to the tangent of the elastic curve at A, tC/A is: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$



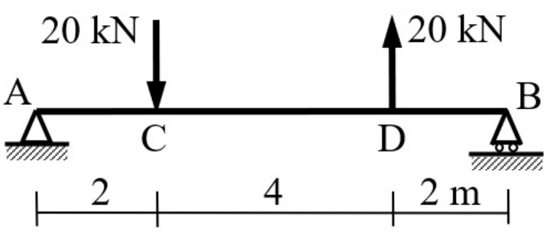
- -0.032 m
- 0.016 m
- zero
- 0.0053 m
- 0.047 m

16

For the shown beam, use the moment-area method:

The slope of the tangent of the elastic curve at point A, theta A is: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$



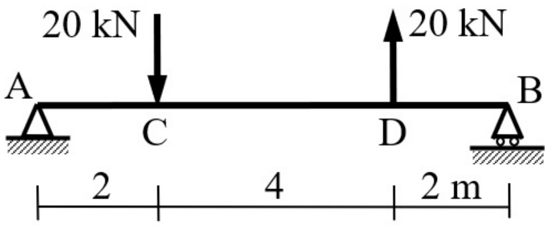
- 0.0016 degree Clockwise
- 0.0016 rad Clockwise
- 0.008 rad Clockwise
- zero
- 0.0032 rad Clockwise

17

For the shown beam, use the moment-area method:

The maximum downward deflection of the beam is: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$



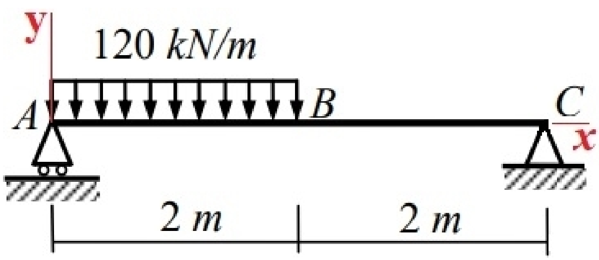
- 14.2 mm
- 10.7 m
- zero
- 10.7 mm
- 8.5 mm

18

For the shown beam, use the double integration:

The slope at A is * (1 Point)

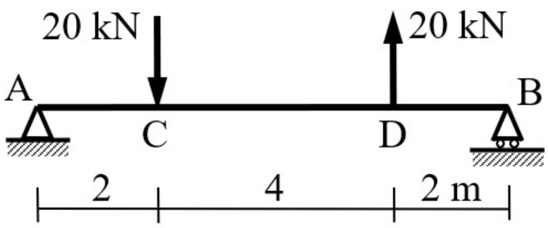
$EI = 4 \times 10^4 \; kN.m^2$



- 0.0090 rad Clockwise
- 0.0755 rad Clockwise
- 0.5110 rad Anticlockwise
- 0.0121 rad Anticlockwise
- 0.0045 rad Clockwise

19

For the shown beam, use the moment-area method:



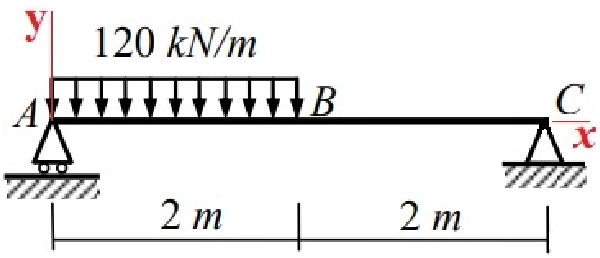
The slope of the tangent of the elastic curve at point D, theta D is: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$

- 0.0016 rad Clockwise
- 0.0064 rad Anticlockwise
- 0.0032 rad Clockwise
- zero
- 0.0016 degree Anticlockwise

20

For the shown beam, use the double integration:



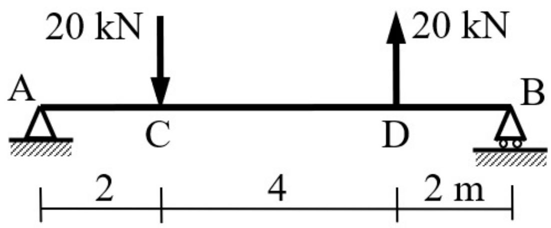
The vertical reaction at the roller support is: * (1 Point)

- 80 kN Upward
- 120 kN Upward
- 40 kN Upward
- 180 kN Upward
- 60 kN Upward

21

For the shown beam, use the moment-area method:

The vertical reaction at the hinged support is: * (1 Point)

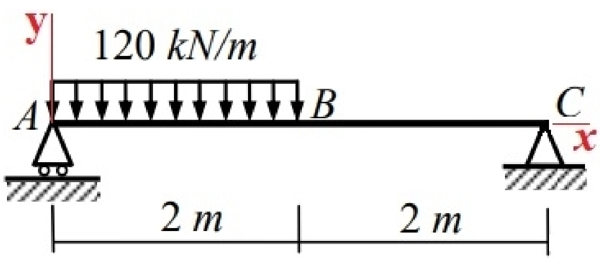


- 10 kN Upward
- 20 kN Upward
- 20 kN Downward
- zero
- 5 kN Upward

22

For the shown beam, use the double integration:

EI y' = * (1 Point)



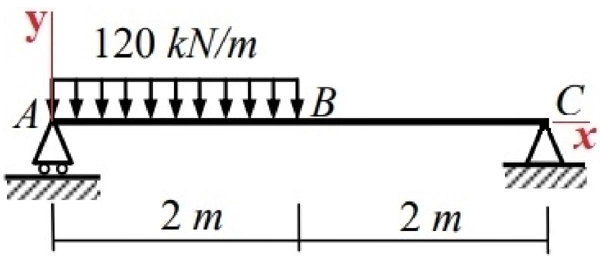
- $90x^2+20x^3-20(x-2)^3+C_1$
- $60x^2-20x^3+20(x-2)^3+C_1$
- $90x^2-20x^3+20(x-2)^3+C_1$
- $90x^2-20x^3+C_1$
- $90x^2 - 40x^3 + 40(x-2)^3 + C_1$

23

For the shown beam, use the double integration:

The slope at C is * (1 Point)

$EI = 4 \times 10^4 \; kN.m^2$



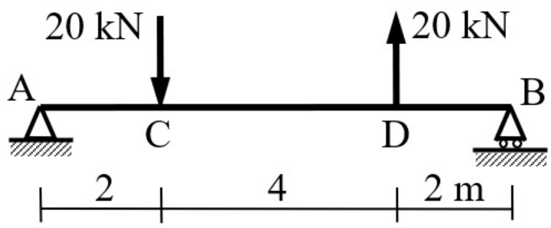
- 0.4010 rad Anticlockwise
- 0.0121 rad Anticlockwise
- 0.0035 rad Anticlockwise
- 0.0755 rad Clockwise
- 0.0070 rad Anticlockwise

24

For the shown beam, use the moment-area method:

The deflection at D is: * (1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$

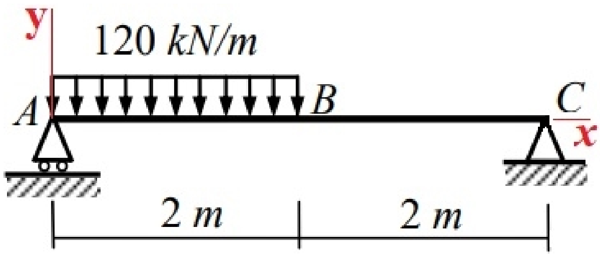


- zero
- 4.2 mm Downward
- 8.5 mm Downward
- 4.2 mm Upward
- 10.7 mm Upward

25

For the shown beam, use the double integration:

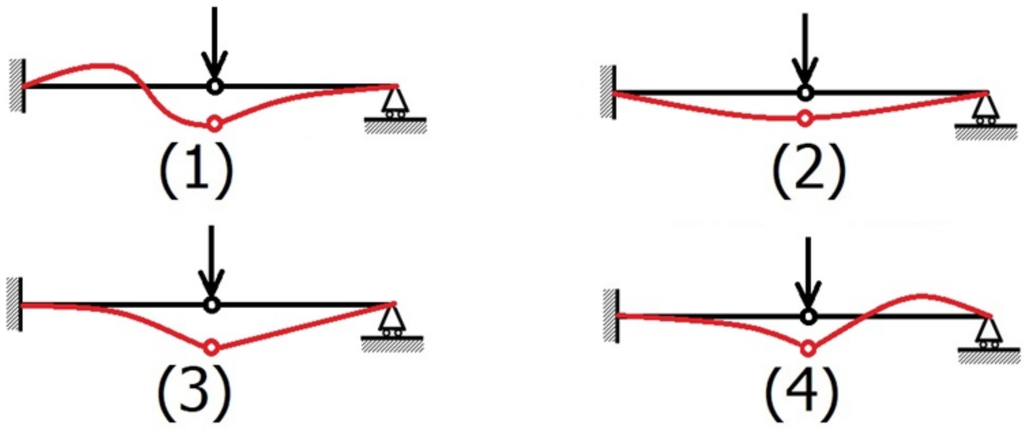
Boundary Conditions are: *
(1 Point)



- ◯ At x=0, y=0 & at x=4, y=0
- ◯ At x=0, y=0 & at x=2, y'=0
- ◯ At x=0, y=0 & at x=4, y'=0
- ◯ At x=0, y=0 & at x=0, y'=0
- ◯ At x=2, y=0 & at x=4, y=0

26

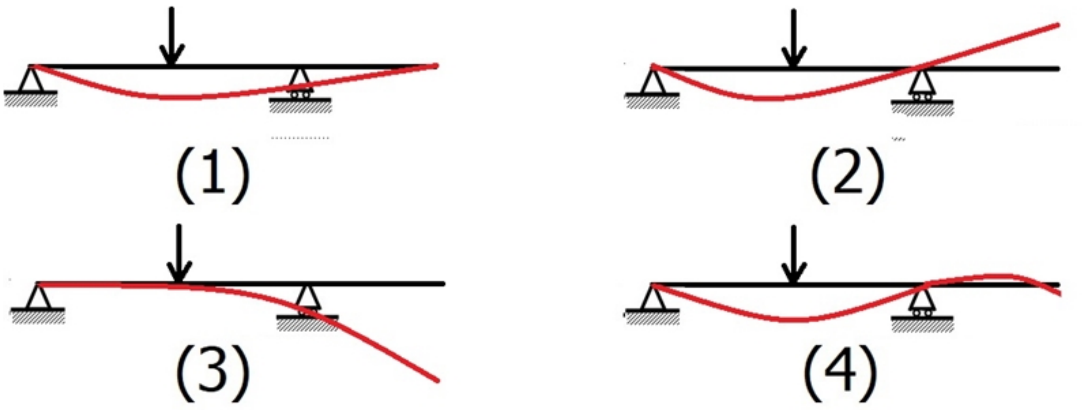
The nearest elastic curve of the shown beam is: * (1 Point)



- 4
- 2
- 1
- 3

27

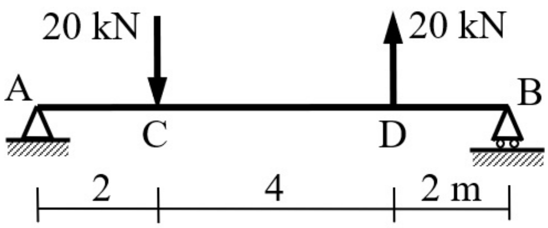
The nearest elastic curve of the shown beam is: * (1 Point)



- 1
- 2
- 4
- 3

28

For the shown beam, use the moment-area method:



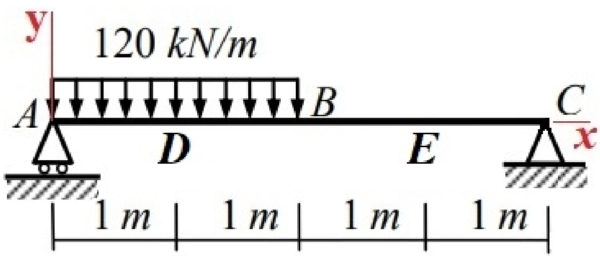
The deflection at C is: *
(1 Point)

$EI = 2.5 \times 10^3 \quad kN.m^2$

- 10.7 mm Downward
- 8.5 mm Upward
- 4.7 mm Downward
- 4.7 mm Upward
- zero

29

For the shown beam, use the double integration:



The deflection at E is *
(1 Point)

$EI = 4 \times 10^4 \; kN.m^2$

- 4.0 mm Downward
- 3.5 mm Downward
- 2.0 mm Downward
- 2.5 mm Downward
- 3.0 mm Downward

30

اكتب اثبات الحضور * (1 Point)

31

(اكتب اسمك رباعى (مثال: محمد احمد محمود عبدالله *

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(اكتب كودك بالارقام (مثال:20180678 *

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