Pertemuan 12

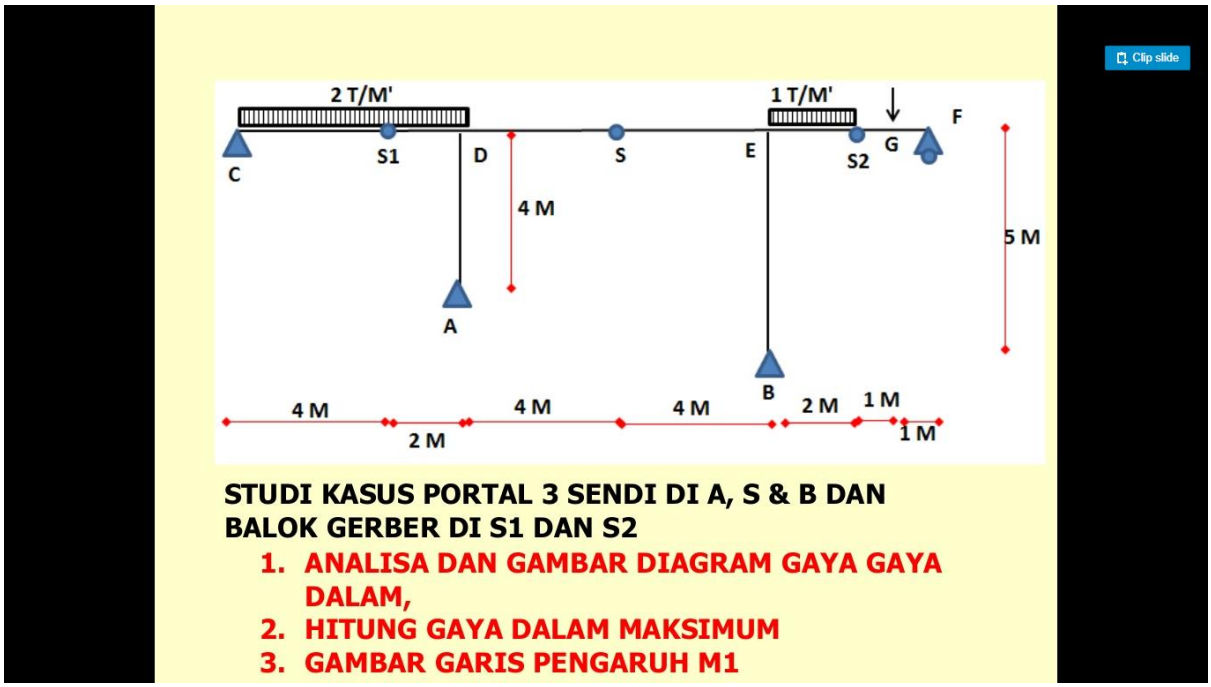
Makul : ANALISA STRUKTUR

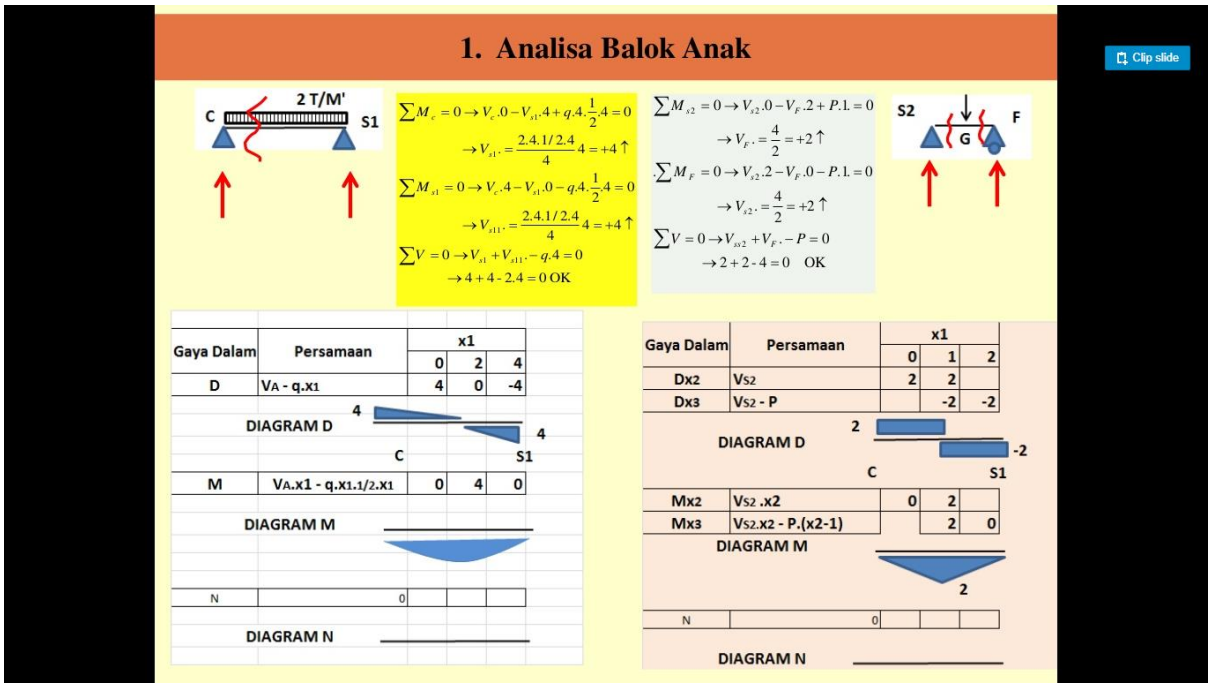
Hari/ tgl. : Kamis, 3 Desember 2020

Jam : 20.00-21.15

Materi : Portal 3 sendi tidak simetris gabungan

KLAS : 3 c (MALAM)

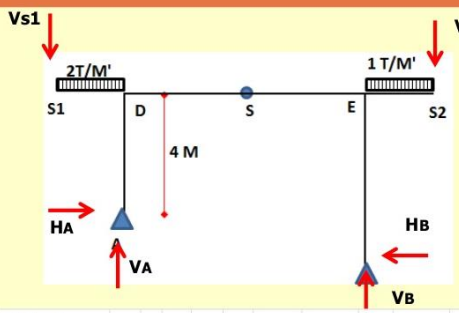




Portal 3 sendi

2. Analisa Balok Induk

Clip slide



substitusi (1) dan (4)

-4 VB	+	5 HB	=	-22	1x
-8 VB	+	1 HB	=	-26	5x
36 VB			=	108	
VB			=	3 ↑	
HB			=	-2 →	

substitusi (2) dan (3)

8 VA	+	1 HA	=	70	4x
4 VA	+	-4 HA	=	44	1x
36 VA		0	=	324	
VA			=	9 ↑	
HA			=	-2 ←	

∑MA = 0
→ VA.0 ± HA.0 - VB.8 + HB.1 - 2.2.½.2 + 2.1.(½.2 +8) - Vs1.2 +Vs2. (8+2) = 0
→ -VB.8 + HB.1= 2.2.1- 2.1.9 + 4.2 - 2.10
→ -VB.8 + HB.1= - 26 ..... (pers 1)

∑MB = 0
→ VA.8 + HA.1- VB.0 + HB.0 - 2.2.(½.2+8)+ 2.1.½.2 - Vs1.(2+8) +Vs2. 2= 0
→ VA.8 + HA.1 = 2.2.9 - 2.1.1 + 4.10 - 2.2
→ VA.8 + HA.1 = 70 ..... (pers 2)

∑MS (pot AS) = 0
→ VA.4 - HA.4 - 2.2.(½.2+4) - Vs1.(2+4) = 0

∑MS (pot SB) = 0
→- VB.4 + HB.5 + 2.1.(½.2+4) + Vs2.(2+4) = 0

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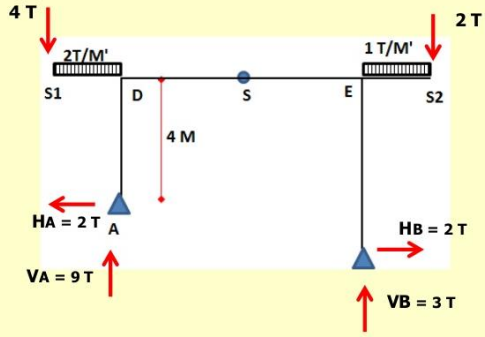
Portal 3 sendi

Kontrol Keseimbangan Luar

Clip slide



∑V = 0
→ VA + VB - Vs1 + Vs2 - q1.2 - q2.2= 0
→ 9 + 3 - 4 - 2 - 2.2 - 1.2 = 0
→ 12 - 12 = 0 ..... (OK)

∑H = 0
→ - HA + H B = 0
→ - 2 + 2 = 0 ..... (OK)

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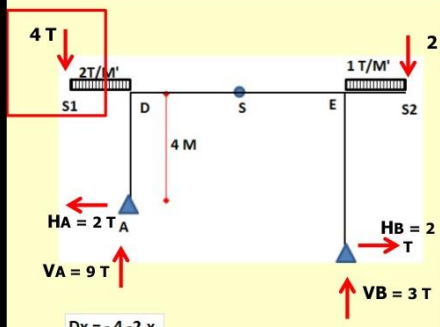
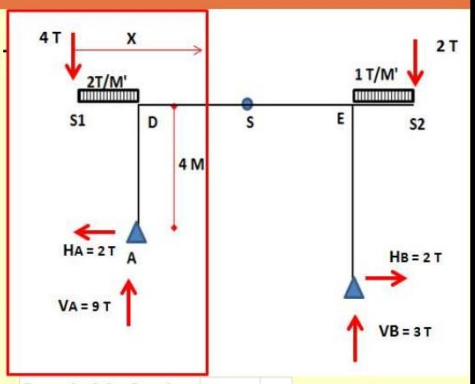
Portal 3 sendi

Analisa Keseimbangan Dalam Balok Induk

Clip slide



Dx = - 4 -2.x		
Mx = - 4.x - x		
Nx = 0		
x	0	2
Dx	-4	-8
Mx	0	-12
Nx	0	0



Dx =-4 - 2.2 + 9 = +1		
Mx = - 4.x -2.2.(x - 1) +2.4 + 9.(X-2)		
'= X - 6		
Nx = 2		
x	2	6
Dx	1	1
Mx	-4	0

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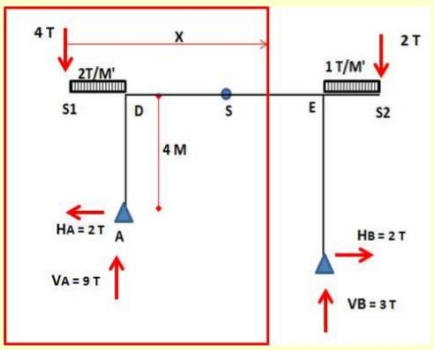
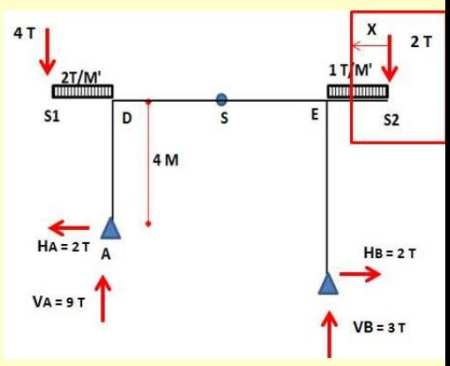
Portal 3 sendi

Analisa Keseimbangan Dalam Balok Induk

Clip slide





Dx =-4 - 2.2 + 9 = +1		
Mx = - 4.x -2.2.(x - 1) +2.4 + 9.(X-2)		
'= X - 6		
Nx = 2		
x	6	10
Dx	1	1
Mx	0	4

Dx = - 2 -1.x		
Mx = - 2.x - ½.x^2		
Nx = 0		
x	0	2
Dx	-2	-4
Mx	0	-6

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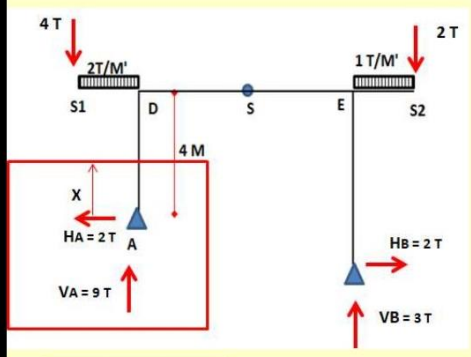
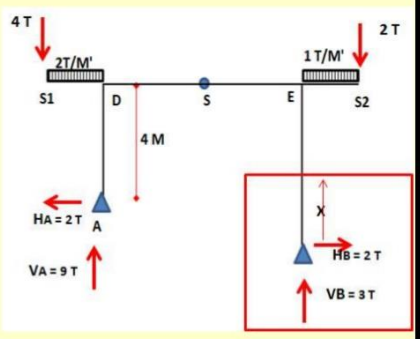
Portal 3 sendi

Analisa Keseimbangan Dalam Balok Induk

Clip slide





Dx = 2		
Mx = 2.X		
Nx = - 9		
x	0	4
Dx	2	2
Mx	0	8
Nx	-9	-9

Dx = - 2		
Mx = 2.X		
Nx = -3		
x	0	5
Dx	-2	-2
Mx	0	10

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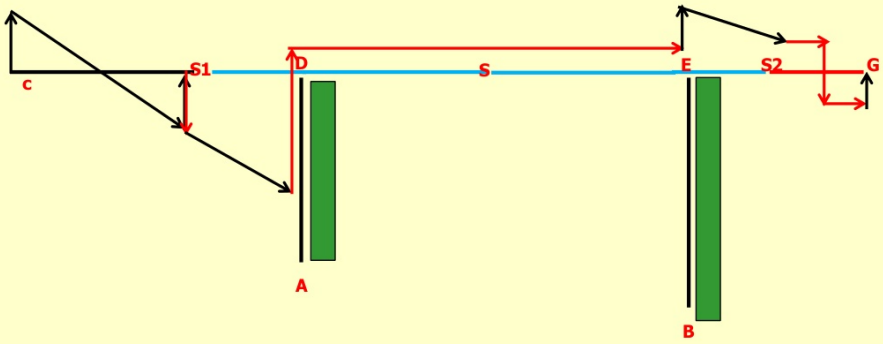
Portal 3 sendi

Diagram Gaya Dalam Lintang (D)

Clip slide



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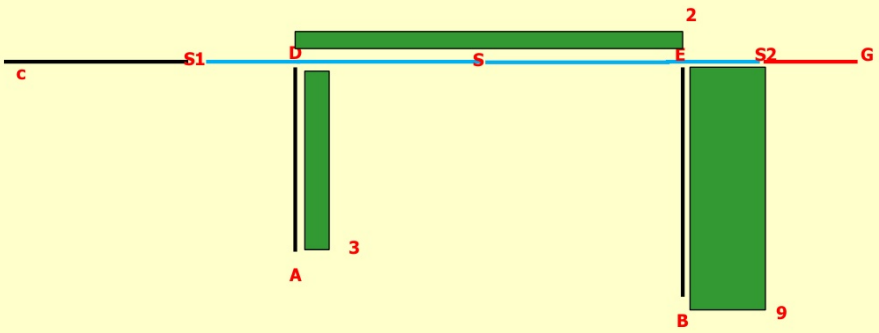
Portal 3 sendi

Diagram Gaya Dalam Normal (N)

Clip slide



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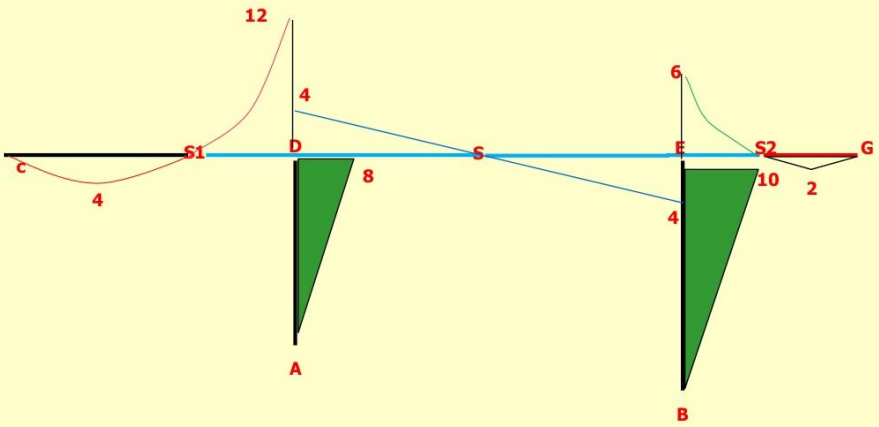
Portal 3 sendi

Diagram Gaya Dalam Momen (M)

Clip slide



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