

## ДОМАШНА РАБОТА № 4 по „Съпротивление на материалите“

За показаната на схемата греда:

1. Да се построят диаграмите на вътрешните усилия.
2. Да се направи якостна проверка на гредата, ако  $\sigma_{доп} = 180$  МПа. Влиянието на  $Q$ -усилията да се пренебрегне.
3. Да се построи диаграмата на напреженията в застрашеното сечение. Да се означат характерните стойности върху диаграмата.

1					
Вар.	F, kN	q, kN.m	L, m	1 и 2	
Вар.1:	10	60	0,6	IPE 200	
Вар.2:	8	40	0,5	IPE 180	
Вар.3:	6	25	0,4	IPE 160	
2					
Вар.	F, kN	q, kN.m	L, m	1 и 2	3 и 4
Вар.1:	20	120	0,6	UPE 120	60,3x2,6
Вар.2:	10	90	0,5	UPE 160	76,1x4
Вар.3:	8	60	0,4	UPE 180	88,9x3,2
3					
Вар.	F, kN	q, kN.m	L, m	1 и 3	b, m
Вар.1:	10	18	1,4	UPE 240	0,06
Вар.2:	8	10	1,0	UPE 180	0,04
Вар.3:	6	12	1,2	UPE 220	0,02
4					
Вар.	F, kN	q, kN.m	L, m	2	b, m
Вар.1:	6	18	1,4	90x90x5	0,10
Вар.2:	4	10	1,0	100x100x5	0,12
Вар.3:	2	12	1,2	140x140x5	0,16
5					
Вар.	F, kN	q, kN.m	L, m	1 и 3	c, m
Вар.1:	24	12	0,8	IPE 140	0,09
Вар.2:	12	6	0,6	IPE 100	0,08
Вар.3:	18	10	1,0	IPE 160	0,10
6					
Вар.	F, kN	q, kN.m	L, m	1 и 2	
Вар.1:	5	30	0,4	UPE 160	
Вар.2:	2	20	0,6	UPE 140	
Вар.3:	4	40	0,5	UPE 180	
7					
Вар.	F, kN	q, kN.m	L, m	1 и 3	b, m
Вар.1:	24	10	0,5	UPE 200	0,04
Вар.2:	12	4	0,6	UPE 100	0,02
Вар.3:	18	8	0,8	UPE 140	0,03
8					
Вар.	F, kN	q, kN.m	L, m	2	b, m
Вар.1:	20	24	0,8	IPE 160	0,03
Вар.2:	18	16	0,5	IPE 140	0,02
Вар.3:	24	20	0,6	IPE 180	0,04
9					
Вар.	F, kN	q, kN.m	L, m	1 и 3	2
Вар.1:	20	24	0,8	UPE 200	200x100x5
Вар.2:	18	16	0,5	UPE 160	160x80x5
Вар.3:	24	20	0,6	UPE 140	140x80x5
10					
Вар.	F, kN	q, kN.m	L, m	1 и 3	2
Вар.1:	16	24	0,6	UPE 240	IPE 240
Вар.2:	12	16	0,5	UPE 180	IPE 180
Вар.3:	10	20	0,4	UPE 140	IPE 140
11					
Вар.	F, kN	q, kN.m	L, m	1 и 3	2
Вар.1:	20	24	0,8	UPN 200	88,9x4
Вар.2:	18	16	0,5	UPN 160	60,3x4
Вар.3:	24	20	0,6	UPN 140	42,4x4
12					
Вар.	F, kN	q, kN.m	L, m	1 и 3	2
Вар.1:	20	12	0,5	UPE 120	IPE 120
Вар.2:	24	8	0,4	UPE 140	IPE 140
Вар.3:	15	4	0,3	UPE 100	IPE 100
13					
Вар.	F, kN	q, kN.m	L, m	2	h, m
Вар.1:	8	24	0,6	IPE 140	0,03
Вар.2:	6	16	0,4	IPE 160	0,02
Вар.3:	4	20	0,3	IPE 120	0,02
14					
Вар.	F, kN	q, kN.m	L, m	1 и 3	h, m
Вар.1:	8	24	0,6	UPE 100	0,16
Вар.2:	6	16	0,4	UPE 120	0,20
Вар.3:	4	20	0,3	UPE 80	0,18
15					
Вар.	F, kN	q, kN.m	L, m	1 и 3	2
Вар.1:	8	24	0,2	IPE 120	90x90x4
Вар.2:	6	16	0,3	IPE 140	100x100x4
Вар.3:	4	20	0,4	IPE 180	140x140x8

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За показаната на схемата греда:

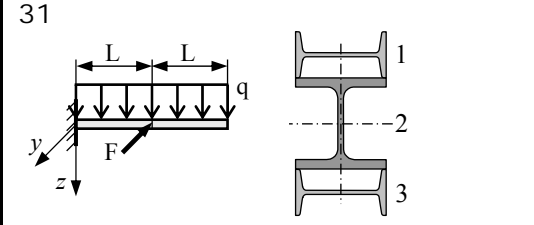
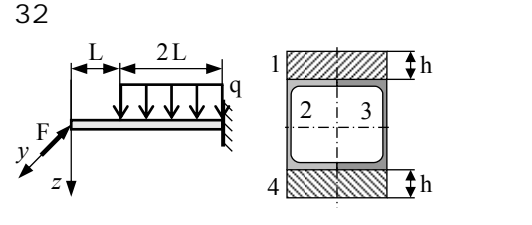
1. Да се построят диаграмите на вътрешните усилия.
2. Да се направи якостна проверка на гредата, ако  $\sigma_{доп} = 180$  МПа. Влиянието на  $Q$ -усилията да се пренебрегне.
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16	17	18																																																																								
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## ДОМАШНА РАБОТА № 4 по „Съпротивление на материалите”

За показаната на схемата греда:

1. Да се построят диаграмите на вътрешните усилия.
2. Да се направи якостна проверка на гредата, ако  $\sigma_{дон} = 180$  МПа. Влиянието на  $Q$ -усилията да се пренебрегне.
3. Да се построи диаграмата на напреженията в застрашеното сечение. Да се означат характерните стойности върху диаграмата.

31						32					
											
Вар.	F, kN	q, kN.m	L, m	1 и 3	2	Вар.	F, kN	q, kN.m	L, m	2 и 3	h, m
Вар.1:	20	12	0,6	IPN 200	HE 200 A	Вар.1:	4	20	0,4	UPE 180	0,02
Вар.2:	24	20	0,7	IPN 240	HE 240 A	Вар.2:	8	24	0,5	UPE 240	0,03
Вар.3:	16	30	0,8	IPN 260	HE 260 A	Вар.3:	6	30	0,6	UPE 300	0,04