

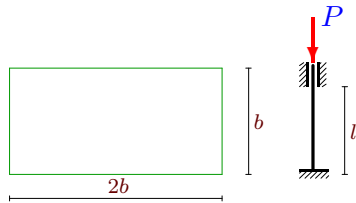
Подбор сечения продольно сжатого стержня

Прямолинейный стержень длиной l сжимается продольной силой P . Подобрать размер b сечения стержня пользуясь таблицей коэффициентов φ снижения допускаемых напряжений $[\sigma]$. Принять точность вычисления φ равной 5%.

Задача 32.1.

3

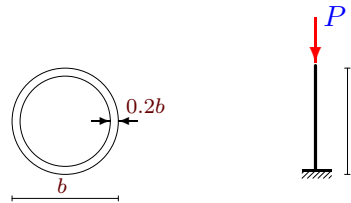
Сталь 5, $[\sigma] = 240$ МПа, $l = 4.8$ м, $P = 770$ кН.



Задача 32.2.

3

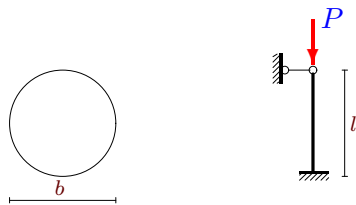
Д16Т, $[\sigma] = 100$ МПа, $l = 0.55$ м, $P = 230$ кН.



Задача 32.3.

3

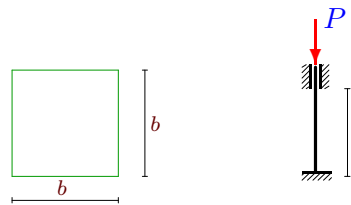
Д16Т, $[\sigma] = 100$ МПа, $l = 1.6$ м, $P = 170$ кН.



Задача 32.4.

3

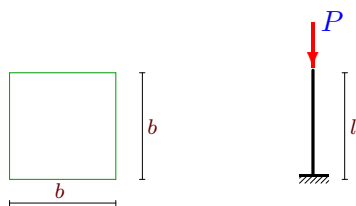
Чугун, $[\sigma] = 130$ МПа, $l = 2.15$ м, $P = 190$ кН.



Задача 32.5.

3

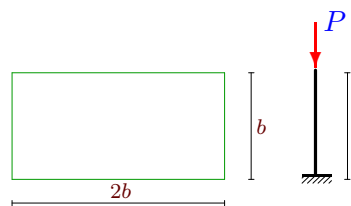
Чугун, $[\sigma] = 130$ МПа, $l = 0.7$ м, $P = 650$ кН.



Задача 32.6.

3

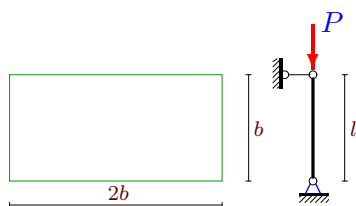
Дерево, $[\sigma] = 11$ МПа, $l = 1.3$ м, $P = 50$ кН.



Задача 32.7.

3

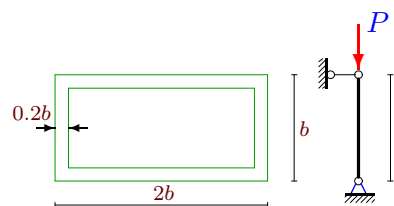
Сталь 5, $[\sigma] = 240$ МПа, $l = 2.7$ м, $P = 990$ кН.



Задача 32.8.

3

Чугун, $[\sigma] = 130$ МПа, $l = 1.3$ м, $P = 660$ кН.



Задача 32.9.

3

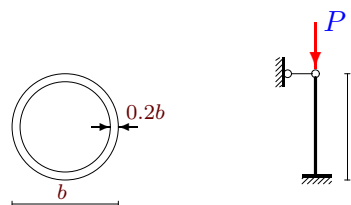
Дерево, $[\sigma] = 11$ МПа, $l = 4.8$ м, $P = 120$ кН.



Задача 32.10.

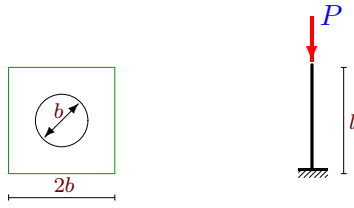
3

Сталь 3, $[\sigma] = 160$ МПа, $l = 3.2$ м, $P = 180$ кН.

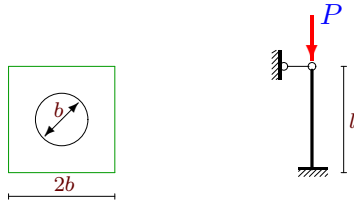


Задача 32.11.

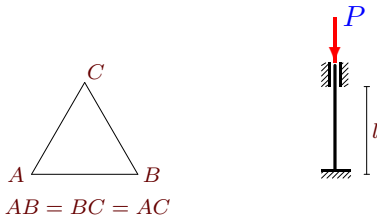
3

Д16Т, $[\sigma] = 100$ МПа, $l = 0.7$ м, $P = 990$ кН.**Задача 32.13.**

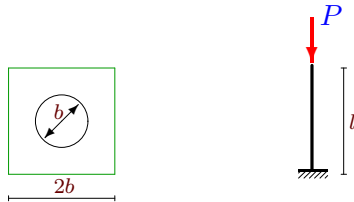
3

Сталь 3, $[\sigma] = 160$ МПа, $l = 3.7$ м, $P = 990$ кН.**Задача 32.15.**

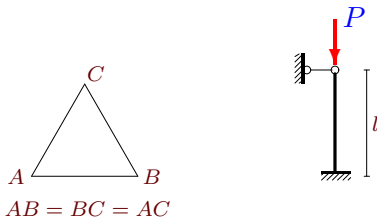
3

Чугун, $[\sigma] = 130$ МПа, $l = 2.6$ м, $P = 60$ кН.**Задача 32.17.**

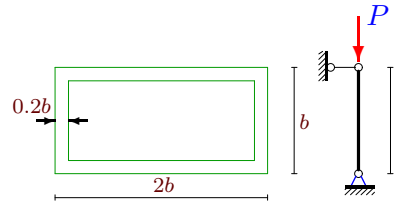
3

Дерево, $[\sigma] = 11$ МПа, $l = 1.1$ м, $P = 180$ кН.**Задача 32.19.**

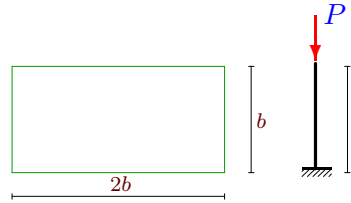
3

Д16Т, $[\sigma] = 100$ МПа, $l = 2$ м, $P = 80$ кН.**Задача 32.12.**

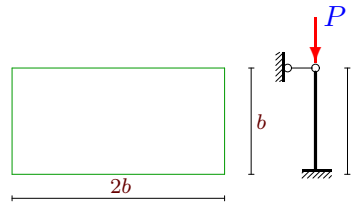
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 2.2$ м, $P = 870$ кН.**Задача 32.14.**

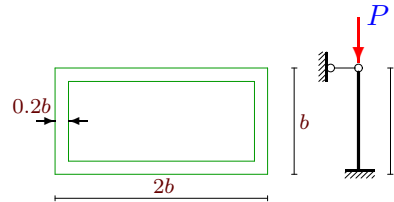
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 1.4$ м, $P = 990$ кН.**Задача 32.16.**

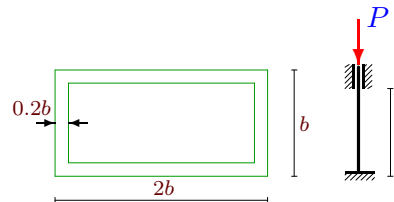
3

Сталь 3, $[\sigma] = 160$ МПа, $l = 3.3$ м, $P = 820$ кН.**Задача 32.18.**

3

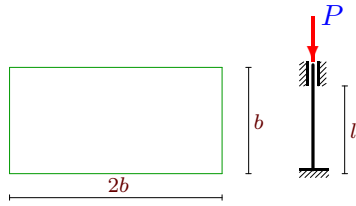
Сталь 3, $[\sigma] = 160$ МПа, $l = 4$ м, $P = 770$ кН.**Задача 32.20.**

3

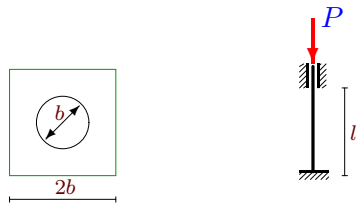
Сталь 3, $[\sigma] = 160$ МПа, $l = 5.5$ м, $P = 660$ кН.

Задача 32.21.

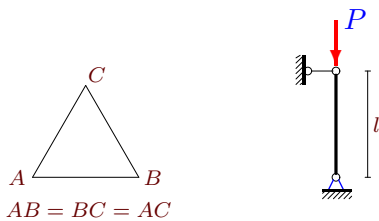
3

Дерево, $[\sigma] = 11$ МПа, $l = 4.7$ м, $P = 20$ кН.**Задача 32.23.**

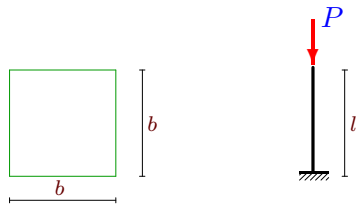
3

Д16Т, $[\sigma] = 100$ МПа, $l = 2.6$ м, $P = 990$ кН.**Задача 32.25.**

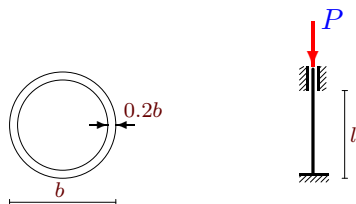
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 2.3$ м, $P = 170$ кН.**Задача 32.27.**

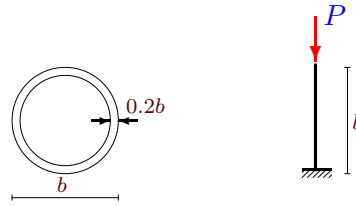
3

Д16Т, $[\sigma] = 100$ МПа, $l = 0.55$ м, $P = 330$ кН.**Задача 32.29.**

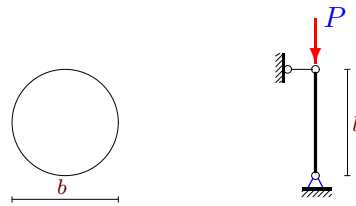
3

Сталь 3, $[\sigma] = 160$ МПа, $l = 4.7$ м, $P = 150$ кН.**Задача 32.22.**

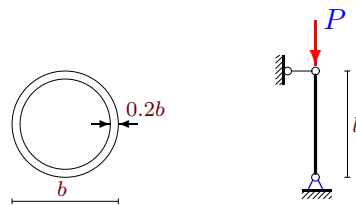
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 1.4$ м, $P = 530$ кН.**Задача 32.24.**

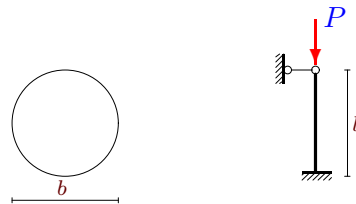
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 2.5$ м, $P = 470$ кН.**Задача 32.26.**

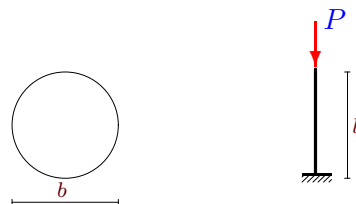
3

Сталь 5, $[\sigma] = 240$ МПа, $l = 2.7$ м, $P = 470$ кН.**Задача 32.28.**

3

Сталь 3, $[\sigma] = 160$ МПа, $l = 3.6$ м, $P = 290$ кН.**Задача 32.30.**

3

Сталь 5, $[\sigma] = 240$ МПа, $l = 1.3$ м, $P = 520$ кН.

Подбор сечения продольно сжатого стержня

№	b	λ	μ
1	6.739	123.375	0.5
2	8.448	44.663	2.0
3	7.113	62.981	0.7
4	5.942	62.674	0.5
5	9.482	51.144	2.0
6	8.786	102.514	2.0
7	7.607	122.955	1.0
8	8.531	41.851	1.0
9	6.744	56.299	0.5
10	6.741	113.984	0.7
11	6.321	35.043	2.0
12	7.316	82.587	1.0
13	5.073	80.774	0.7
14	7.744	125.250	2.0
15	7.175	88.765	0.5
16	7.127	112.273	0.7
17	7.786	44.704	2.0
18	8.317	92.471	0.7
19	8.409	81.560	0.7
20	7.876	95.895	0.5
21	6.614	123.091	0.5
22	9.455	101.571	2.0
23	6.212	33.108	0.5
24	8.260	121.066	1.0
25	7.816	144.155	1.0
26	9.004	102.855	1.0
27	7.609	50.080	2.0
28	7.648	131.806	0.7
29	6.548	123.105	0.5
30	8.648	120.263	2.0