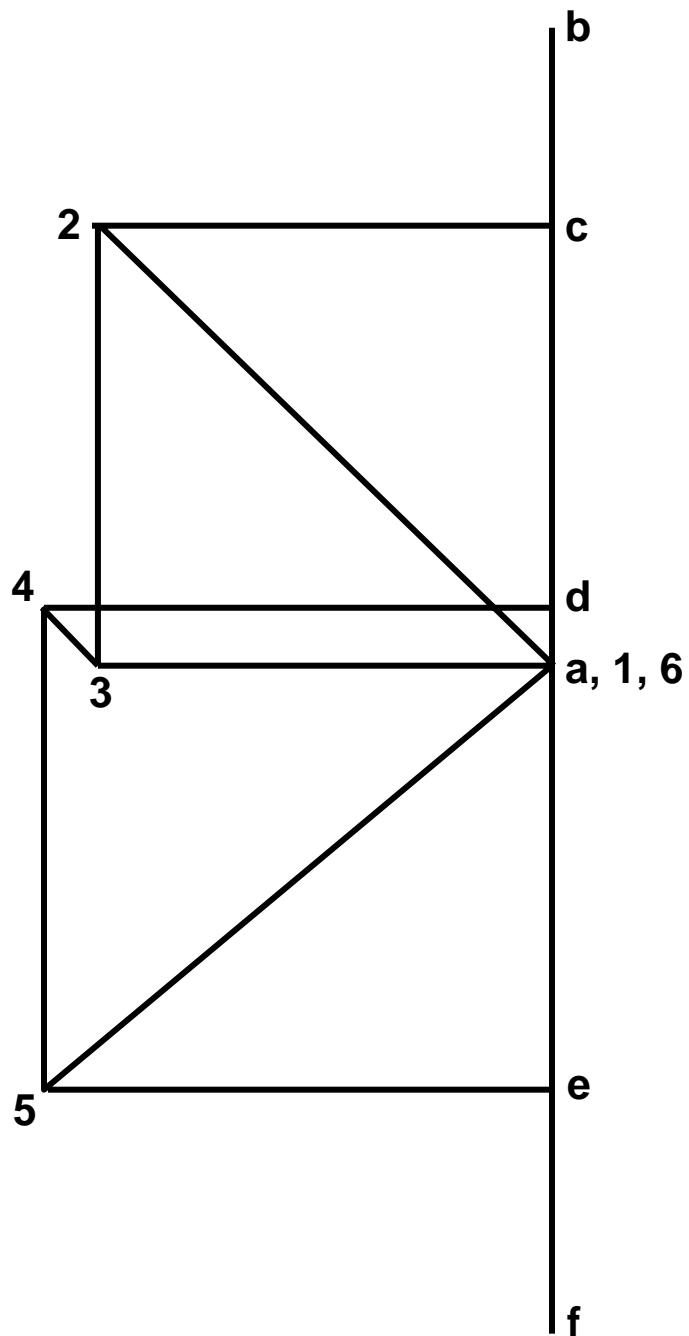


SOLUTIONS TO TUTORIAL EXAMPLES

CHAPTER 15

Note: See diagram at end of this section for application of Bow's notation.

Question 1



Question 1 (continued)

The force diagram on the previous page was obtained by using Bow's notation and plotting the forces graphically using the technique outlined in Chapter 15. The forces in individual members can now be obtained by scaling off the force diagram, and the values (and senses) of these forces are given in the table below.

Reactions:

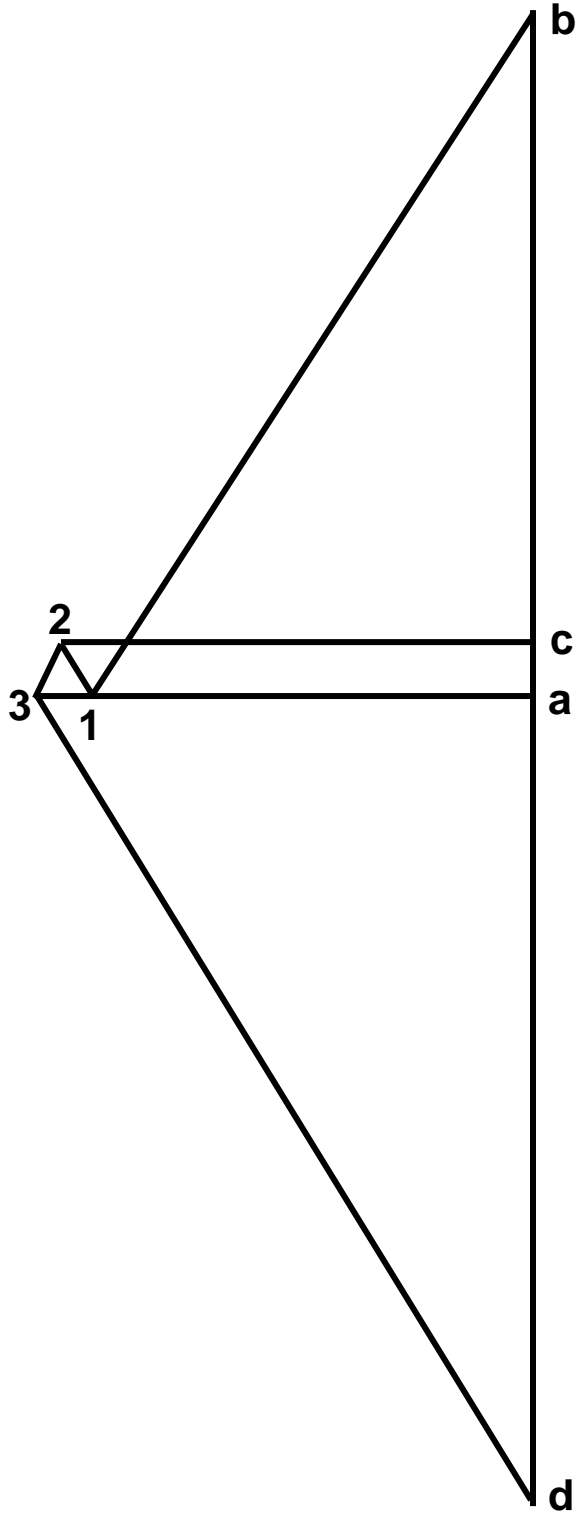
left-hand support: 186 kN (downwards),
right-hand support: 224 kN (downwards).

The points on the force diagram were plotted in the following order:

a, b, c, d, e, f, 1, 2, 3, 4, 5, 6

Member	Force (kN)	Tension (T) or compression (C)
b-1	186	C
a-1	0	0
c-2	126	C
1-2	178	T
2-3	126	C
a-3	126	T
3-4	26	T
d-4	144	C
4-5	162	C
a-6	0	0
5-6	204	T
e-5	144	C
f-6	224	C

Question 2



Question 2 (continued)

The force diagram on the previous page was obtained by using Bow's notation and plotting the forces graphically using the technique outlined in Chapter 15. The forces in individual members can now be obtained by scaling off the force diagram, and the values (and senses) of these forces are given in the table below.

Reactions:

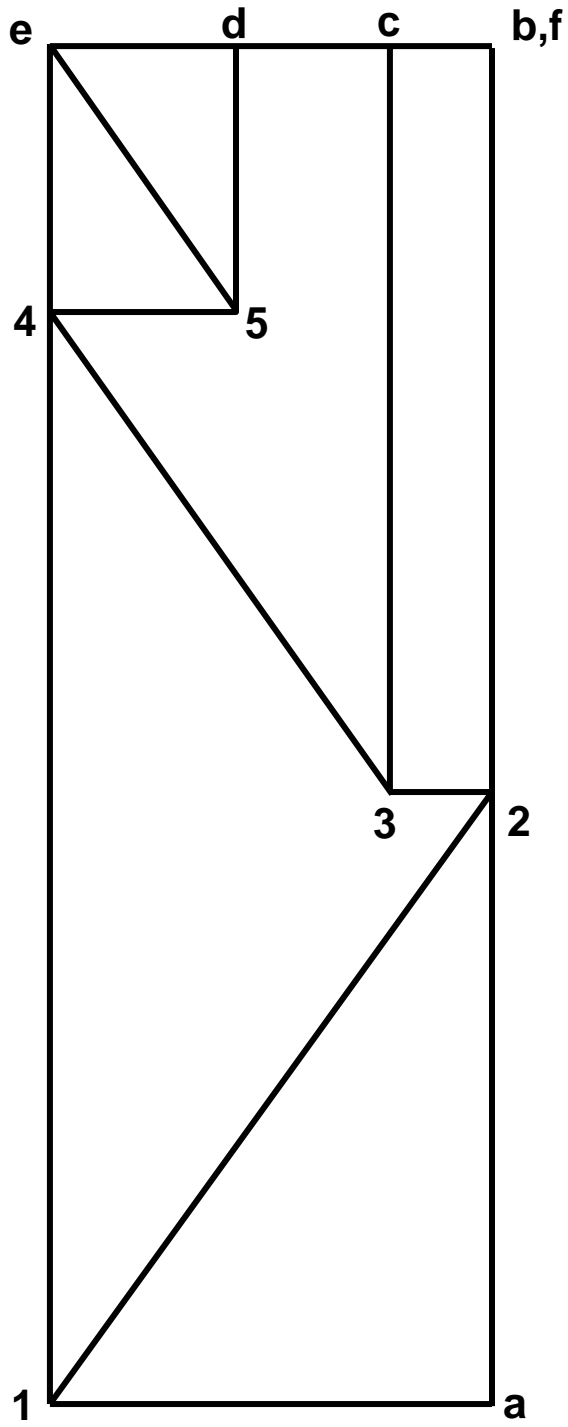
left-hand support: 45 kN (downwards),
right-hand support: 55 kN (downwards).

The points on the force diagram were plotted in the following order:

a, b, c, d, 1, 2, 3

Member	Force (kN)	Tension (T) or compression (C)
c-2	29	C
a-1	26	T
a-3	32	T
b-1	52	C
1-2	6	T
2-3	6	C
d-3	64	C

Question 3



Question 3 (continued)

The force diagram on the previous page was obtained by using Bow's notation and plotting the forces graphically using the technique outlined in Chapter 15. The forces in individual members can now be obtained by scaling off the force diagram, and the values (and senses) of these forces are given in the table below.

Reactions:

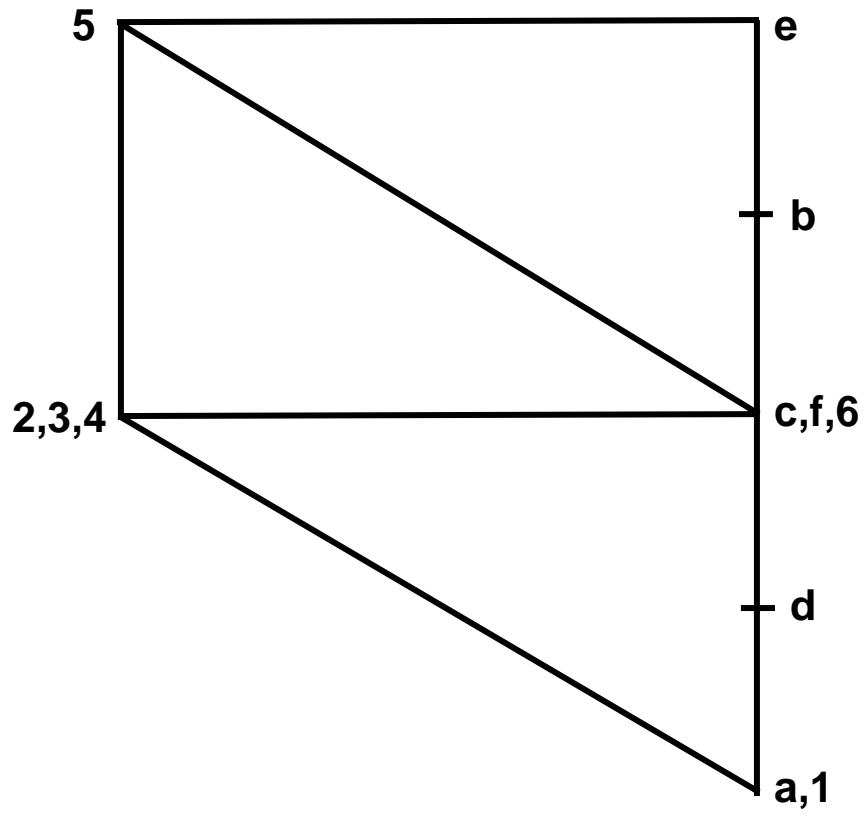
left-hand support: 106.7 kN (upwards),
right-hand support: 106.7 kN (downwards),
horizontal reaction at right-hand support: 36 kN (to the right).

The points on the force diagram were plotted in the following order:

a, b, c, d, e, f, 1, 2, 3, 4, 5

Member	Force (kN)	Tension (T) or compression (C)
d-5	21	C
e-5	27	T
4-5	16	C
c-3	59	C
3-4	47	T
e-4	21	T
2-3	8	T
b-2	59	C
1-2	60	C
e-1	107	T
a-1	36	T

Question 4



Question 4 (continued)

The force diagram on the previous page was obtained by using Bow's notation and plotting the forces graphically using the technique outlined in Chapter 15. The forces in individual members can now be obtained by scaling off the force diagram, and the values (and senses) of these forces are given in the table below.

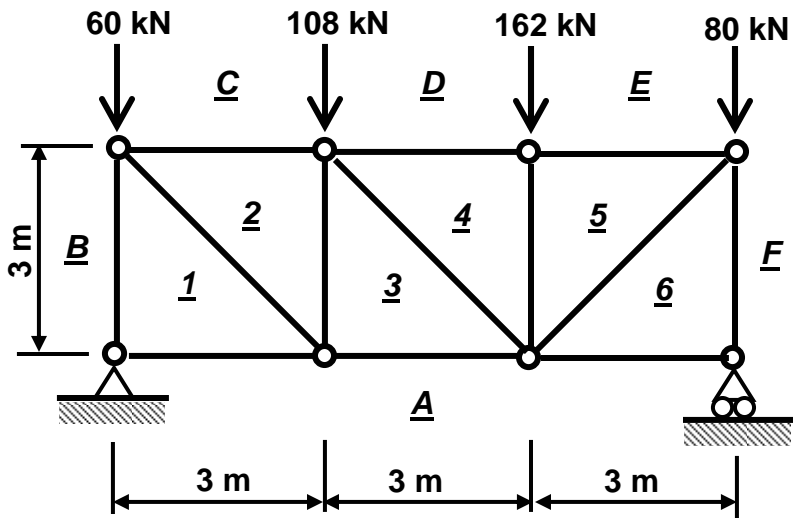
Reactions:

left-hand support: 24 kN (upwards),
right-hand support: 24 kN (upwards).

The points on the force diagram were plotted in the following order:

a, b, c, d, e, f, 1, 2, 3, 4, 5, 6

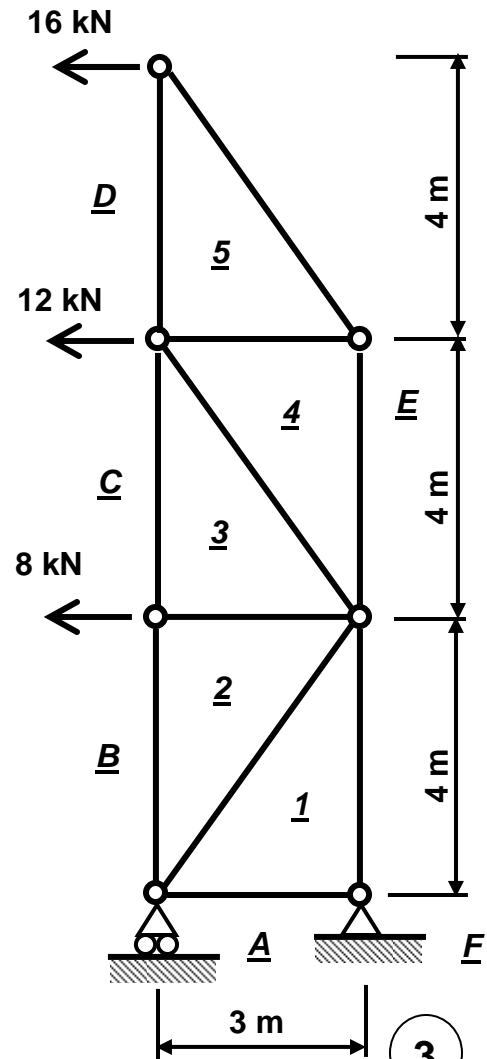
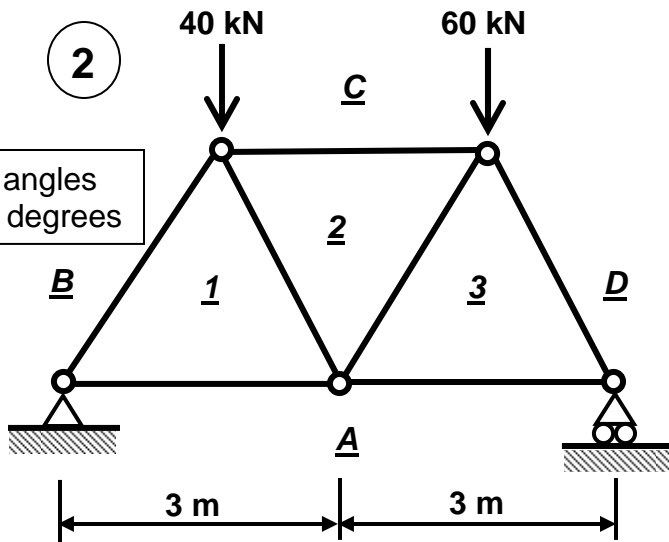
Member	Force (kN)	Tension (T) or compression (C)
b-1	24	C
a-1	0	0
1-2	31	T
c-2	26.6	C
2-3	0	0
c-3	26.6	C
3-4	0	0
f-4	26.6	T
4-5	16	T
e-5	26.6	T
5-6	31	C
c-6	0	0
d-6	8	C



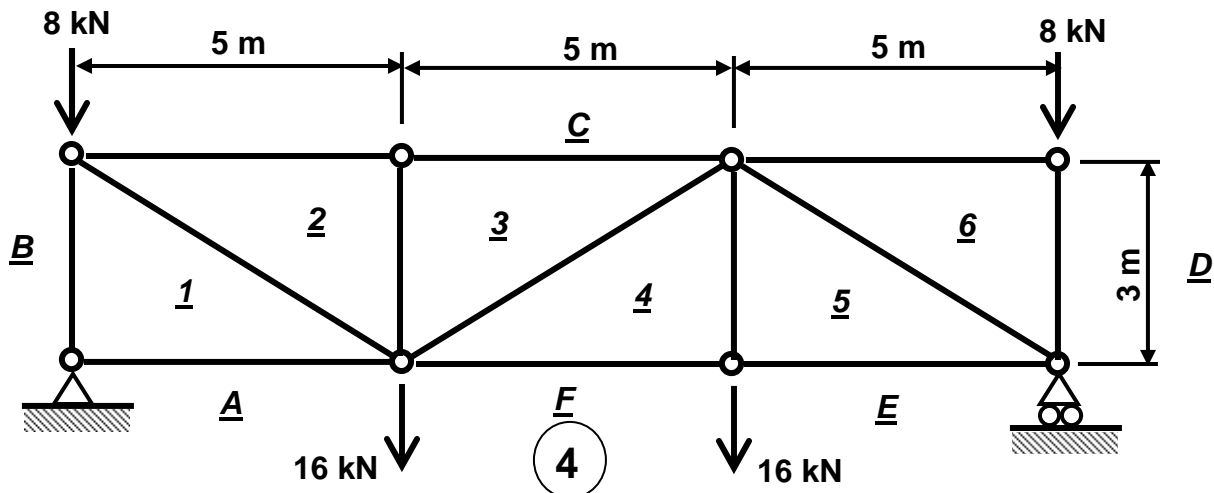
1

2

all angles
60 degrees



3



4

Underlined letters and numbers represent Bow's notation.