Приложение 1.

№	Условие
1	$(A+B)^2-(A^2+2AB+B^2)=\ldots$
2	$(A-B)(A+B)-A^2+B^2=\ldots$
3	$(A+B)^2-(A^2+B^2)=\ldots$
4	$(A-B)^2-(A^2+B^2)=\ldots$
5	$A^2-2AB+B^2-(A-B)^2=\ldots$
6	$(A-2B)(A+2B)-A^2+4B^2=\ldots$
7	$9A^2+B^2-(3A+B)^2=\ldots$
8	$(2A-B)^2-4A^2-B^2=\ldots$
9	$(3A+2B)^2-9A^2-4B^2=\ldots$
10	$A^2+4B^2-(A-2B)^2=\ldots$
11	$(A+B)^2-2AB-B^2=\ldots$
12	$(A-3B)^2-(A^2-6AB+9B^2)=\ldots$
13	$(A-B)^2+2AB=\ldots$
14	$A^2-B^2+(B-A)(B+A)=\ldots$
15	$B^2-4A^2-(B-2A)(B+2A)=\ldots$
16	$(A+B)^2-2AB=\ldots$
17	$4A^2-8AB+4B^2-4(A-B)^2=\ldots$
18	$BA+AB+(A-B)^2=\ldots$
19	$A^2+4AB+4B^2-(A+2B)^2=\ldots$
20	$(2A+B)^2-(B^2+4AB+4A^2)=\ldots$
21	$(2A-B)^2-(4A^2-4AB+B^2)=\ldots$
22	$A^2-B^2-(A+B)(A-B)=\ldots$
23	$A^2+B^2-(A+B)^2=\ldots$

24	$A^2+B^2-(A-B)^2=\ldots$
25	$AB+BA-(A+B)^2=\ldots$
26	$(3A-B)^2-(9A^2+B^2)=\ldots$
27	$(B+3A)^2-3(AB+BA)=\ldots$
28	$\frac{(A+B)^2}{2}-AB=\ldots$
29	$(A-B)^2-(B^2-BA)=\ldots$
30	$(A+B)^2-(AB+A^2)=\ldots$

Приложение 2.

01 $\begin{vmatrix} -3 & -3 & 4 & -1 \\ 4 & 4 & 1 & 5 \\ -1 & 0 & -2 & 5 \\ -5 & -3 & 0 & 2 \end{vmatrix}$	**02** $\begin{vmatrix} -5 & 1 & 2 & -1 \\ 5 & 1 & 3 & 1 \\ 0 & 3 & 6 & -2 \\ -3 & 0 & 1 & -4 \end{vmatrix}$
03 $\begin{vmatrix} 4 & -1 & 4 & 3 \\ 2 & -2 & -2 & 0 \\ 3 & 5 & -1 & 5 \\ -1 & -4 & 3 & 3 \end{vmatrix}$	**04** $\begin{vmatrix} 3 & -2 & -2 & -4 \\ 0 & 4 & 4 & 1 \\ 4 & -3 & 5 & 4 \\ -2 & -4 & 3 & -5 \end{vmatrix}$
05 $\begin{vmatrix} 3 & -5 & -1 & 3 \\ 1 & 5 & 1 & 5 \\ 6 & -1 & 1 & 2 \\ -3 & -3 & 0 & 4 \end{vmatrix}$	**06** $\begin{vmatrix} -2 & 5 & -5 & 3 \\ 3 & 1 & -1 & 2 \\ 0 & 5 & 4 & 5 \\ -4 & 2 & 5 & 5 \end{vmatrix}$

07

$$\begin{vmatrix} 3 & -3 & -4 & 4 \\ 5 & 2 & 1 & 0 \\ 6 & 1 & 5 & -3 \\ 0 & 5 & 4 & 5 \end{vmatrix}$$

08

$$\begin{vmatrix} -1 & 1 & -1 & -1 \\ 2 & 3 & 4 & 0 \\ 5 & 0 & 5 & 6 \\ 2 & 2 & 5 & -5 \end{vmatrix}$$

09

$$\begin{vmatrix} -2 & 2 & 3 & 3 \\ -2 & 0 & 3 & 1 \\ 4 & 3 & 6 & -1 \\ 4 & -2 & 0 & 2 \end{vmatrix}$$

10

$$\begin{vmatrix} -2 & -2 & 2 & 1 \\ 5 & 0 & 2 & 3 \\ 2 & 2 & 6 & 4 \\ -4 & 3 & -5 & 5 \end{vmatrix}$$

11

$$\begin{vmatrix} -1 & -4 & 5 & -4 \\ -2 & 2 & 1 & 3 \\ -1 & 5 & 0 & 4 \\ -4 & -4 & -2 & -1 \end{vmatrix}$$

12

$$\begin{vmatrix} 2 & 4 & -2 & -3 \\ 4 & 3 & 4 & -2 \\ -1 & 1 & 3 & 5 \\ 0 & 3 & -1 & -3 \end{vmatrix}$$

13

$$\begin{vmatrix} 3 & -5 & 4 & -5 \\ 1 & -1 & 3 & 4 \\ 4 & 5 & -2 & 0 \\ -2 & -5 & 3 & 5 \end{vmatrix}$$

14

$$\begin{vmatrix} -2 & 1 & -5 & 2 \\ 0 & 4 & 0 & 5 \\ -3 & 3 & 3 & 1 \\ 5 & -3 & 2 & 4 \end{vmatrix}$$

15

$$\begin{vmatrix} -5 & 5 & 5 & -3 \\ 4 & 5 & 3 & -2 \\ 3 & 1 & 0 & 3 \\ -5 & 0 & -4 & 1 \end{vmatrix}$$

16

$$\begin{vmatrix} 4 & -4 & -1 & 1 \\ 1 & 4 & 1 & -1 \\ 6 & 6 & 4 & 0 \\ -3 & -1 & 5 & 4 \end{vmatrix}$$

17

$$\begin{vmatrix} 5 & 5 & 5 & 1 \\ 0 & -2 & 5 & -1 \\ 1 & 3 & 2 & 4 \\ -3 & 1 & 1 & -3 \end{vmatrix}$$

18

$$\begin{vmatrix} 5 & 4 & 4 & 4 \\ 2 & 4 & -2 & -1 \\ -2 & -6 & -3 & -2 \\ -1 & 1 & 0 & -3 \end{vmatrix}$$

19

$$\begin{vmatrix} 4 & 4 & 3 & 5 \\ 1 & 5 & -1 & 4 \\ -2 & -3 & -5 & -5 \\ -2 & 4 & 0 & 2 \end{vmatrix}$$

20

$$\begin{vmatrix} 5 & 2 & 3 & 5 \\ 1 & 0 & -1 & 4 \\ -4 & -3 & -6 & -2 \\ 3 & -4 & 0 & -5 \end{vmatrix}$$

21

$$\begin{vmatrix} 2 & 1 & 4 & 3 \\ 5 & 1 & 5 & 0 \\ -2 & -4 & -3 & -2 \\ 2 & 4 & -2 & 4 \end{vmatrix}$$

22

$$\begin{vmatrix} 2 & 5 & 5 & 2 \\ -2 & 3 & 0 & 4 \\ -2 & -1 & -3 & -4 \\ 4 & 3 & 5 & -3 \end{vmatrix}$$

23

$$\begin{vmatrix} 2 & 1 & 1 & 3 \\ 0 & 1 & -1 & -2 \\ -4 & -4 & -2 & -6 \\ 5 & 5 & -5 & 5 \end{vmatrix}$$

24

$$\begin{vmatrix} 4 & 4 & 4 & 2 \\ -1 & 0 & -2 & -2 \\ -3 & -3 & -2 & -1 \\ -3 & 4 & 3 & 1 \end{vmatrix}$$

25

$$\begin{vmatrix} 3 & 3 & 5 & 3 \\ 5 & 2 & 0 & 2 \\ -5 & -6 & -5 & -6 \\ 3 & -1 & 3 & -4 \end{vmatrix}$$

26

$$\begin{vmatrix} 3 & 5 & 5 & 2 \\ -2 & 3 & 2 & 2 \\ -4 & -3 & -6 & -5 \\ -4 & 0 & -2 & 0 \end{vmatrix}$$

27 $\begin{vmatrix} 5 & 5 & 4 & 2 \\ 0 & 2 & 4 & 3 \\ -2 & -6 & -6 & -4 \\ 4 & 3 & -3 & 5 \end{vmatrix}$	**28** $\begin{vmatrix} 1 & 1 & 4 & 3 \\ 2 & 3 & 1 & 0 \\ -4 & -6 & -4 & -1 \\ -1 & 4 & -4 & -5 \end{vmatrix}$
29 $\begin{vmatrix} 1 & 1 & 3 & 2 \\ 1 & 3 & 1 & 2 \\ -1 & -1 & -5 & -2 \\ -3 & -3 & -3 & 0 \end{vmatrix}$	**30** $\begin{vmatrix} 1 & 4 & 3 & 1 \\ -1 & 0 & -2 & 5 \\ -6 & -3 & -4 & -2 \\ 5 & -1 & 4 & -2 \end{vmatrix}$

Приложение 3.

01 $\begin{cases} -x_1 - 5x_2 + 3x_3 = 4, \\ 2x_1 + 3x_2 + 2x_3 = 18, \\ -2x_1 + 6x_2 - x_3 = 5. \end{cases}$	**02** $\begin{cases} x_1 + 3x_2 - x_3 = 8, \\ 5x_1 - 2x_2 + 5x_3 = 6, \\ x_1 + 2x_2 = 6. \end{cases}$
03 $\begin{cases} 5x_1 - 2x_2 - 2x_3 = -16, \\ 2x_1 - x_2 = -5, \\ x_1 - 2x_2 + 4x_3 = 4. \end{cases}$	**04** $\begin{cases} 5x_1 + 5x_2 + 4x_3 = 31, \\ 5x_1 + x_2 - x_3 = 3, \\ x_1 + x_2 = 3. \end{cases}$
05 $\begin{cases} x_1 + 4x_2 + x_3 = 13, \\ x_1 + x_3 = 5, \\ 4x_1 - x_2 + 5x_3 = 24. \end{cases}$	**06** $\begin{cases} 2x_1 + 4x_2 - 2x_3 = 0, \\ 5x_1 + x_2 + 4x_3 = 9, \\ 3x_1 - 3x_2 + x_3 = 14. \end{cases}$

07 $\begin{cases} -2x_1 + 2x_2 - x_3 = 13, \\ x_1 + 4x_2 + 4x_3 = 7, \\ 2x_1 + x_2 - 3x_3 = -11. \end{cases}$	**08** $\begin{cases} 3x_1 + 4x_2 + 3x_3 = 4, \\ 5x_1 + x_2 - 2x_3 = 15, \\ 2x_1 + 6x_2 - x_3 = 12. \end{cases}$
09 $\begin{cases} -x_1 + 3x_3 = -8, \\ -x_1 - 2x_2 - 2x_3 = 6, \\ 2x_1 - 3x_2 + x_3 = 8. \end{cases}$	**10** $\begin{cases} 4x_1 - 4x_2 - 5x_3 = -9, \\ 4x_1 + 5x_2 + 5x_3 = -30, \\ 3x_1 - x_2 + 3x_3 = -25. \end{cases}$
11 $\begin{cases} x_1 - x_2 - 3x_3 = 11, \\ 5x_1 + 3x_2 = 10, \\ 6x_1 - 2x_2 + 6x_3 = -6. \end{cases}$	**12** $\begin{cases} 5x_1 - 2x_2 + 5x_3 = 23, \\ -x_1 + 4x_2 + x_3 = 5, \\ x_1 + 3x_2 - x_3 = 2. \end{cases}$
13 $\begin{cases} x_1 + x_2 - x_3 = 3, \\ -2x_2 - x_3 = 1, \\ 2x_1 - 2x_2 - x_3 = -1. \end{cases}$	**14** $\begin{cases} 2x_1 + x_2 = 5, \\ x_1 - 2x_2 + 4x_3 = 9, \\ 5x_1 - 3x_2 + 2x_3 = 20. \end{cases}$
15 $\begin{cases} -2x_1 - 5x_2 + 5x_3 = 13, \\ -x_1 + 5x_2 - 2x_3 = -7, \\ 4x_1 + x_2 + 4x_3 = 16. \end{cases}$	**16** $\begin{cases} x_1 + x_2 = 2, \\ 4x_1 + 2x_2 + 3x_3 = 9, \\ 4x_1 + x_2 + 5x_3 = 9. \end{cases}$
17 $\begin{cases} 5x_1 - 4x_2 + 5x_3 = -1, \\ 3x_1 - 2x_2 + x_3 = 3, \\ 4x_2 + 3x_3 = -10. \end{cases}$	**18** $\begin{cases} x_1 + 5x_2 + 3x_3 = -5, \\ -x_1 + 4x_2 - 2x_3 = -3, \\ 3x_1 + 2x_2 - 2x_3 = -13. \end{cases}$
19 $\begin{cases} -2x_1 + 5x_2 - 2x_3 = -12, \\ -2x_1 + 3x_2 + 4x_3 = 22, \\ 2x_1 - 3x_2 + 4x_3 = 18. \end{cases}$	**20** $\begin{cases} -4x_1 - x_2 + x_3 = -5, \\ 2x_1 - x_2 + 4x_3 = 13, \\ 2x_1 + 3x_2 - 2x_3 = 9. \end{cases}$

21 $\begin{cases} 5x_1 - x_3 = 7, \\ -2x_1 + x_2 - 2x_3 = 5, \\ 4x_1 + 3x_2 - 3x_3 = 19. \end{cases}$	**22** $\begin{cases} -x_1 - 4x_2 + 4x_3 = 1, \\ 4x_1 - x_2 - x_3 = 15, \\ 3x_1 - 3x_2 = 15. \end{cases}$
23 $\begin{cases} 5x_1 - 4x_2 + 3x_3 = 39, \\ 3x_1 + 2x_2 + 2x_3 = 20, \\ 2x_1 + x_2 + x_3 = 12. \end{cases}$	**24** $\begin{cases} x_1 + 3x_2 - 5x_3 = -14, \\ 5x_1 + 4x_2 - x_3 = 17, \\ x_1 - x_2 + 2x_3 = 9. \end{cases}$
25 $\begin{cases} -5x_1 - 4x_2 + 4x_3 = 45, \\ 5x_1 - x_2 + 4x_3 = -2, \\ 2x_1 - x_2 + 3x_3 = 7. \end{cases}$	**26** $\begin{cases} 3x_1 + 5x_2 - 5x_3 = 12, \\ x_1 + 2x_2 = 1, \\ 5x_1 + 5x_2 + 4x_3 = -8. \end{cases}$
27 $\begin{cases} 5x_1 - 3x_2 - 3x_3 = 9, \\ 3x_1 + 2x_3 = 9, \\ 5x_1 + 5x_2 - 3x_3 = 25. \end{cases}$	**28** $\begin{cases} -2x_1 - 4x_2 + 5x_3 = 13, \\ -x_1 + 2x_3 = 3, \\ -2x_1 + 3x_2 - 3x_3 = 7. \end{cases}$
29 $\begin{cases} 3x_1 + 5x_2 + 2x_3 = 6, \\ 2x_1 - 2x_2 + 5x_3 = 24, \\ -x_1 + 6x_2 + 2x_3 = 1. \end{cases}$	**30** $\begin{cases} -4x_1 + x_2 + x_3 = -2, \\ -x_1 + 4x_2 + x_3 = -2, \\ 2x_1 - x_2 + 3x_3 = 12. \end{cases}$

Приложение 4.

01 $\begin{cases} 2x_1 + x_2 + 3x_3 + x_4 + 2x_5 = 0, \\ -2x_1 - x_2 + 5x_3 + x_4 - 2x_5 = 0, \\ 4x_1 - 3x_3 + 3x_4 - 3x_5 = 0; \end{cases}$ $\begin{cases} x_1 + 2x_2 + 2x_3 + 5x_4 = 2, \\ 3x_2 + 3x_3 + 3x_4 = 1, \\ x_1 + x_2 + 3x_3 + 4x_4 = 3. \end{cases}$

02

$$\begin{cases} 3x_1 + x_2 + 5x_3 + 4x_4 + 2x_5 = 0, \\ 2x_1 + 5x_2 + x_3 + 4x_4 + x_5 = 0, \\ -x_1 + 5x_2 + 3x_3 + 6x_4 - 3x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + 5x_2 + x_3 + 4x_4 = 2, \\ 4x_1 + x_2 + x_3 = 0, \\ -x_2 - x_3 - 2x_4 = 3. \end{cases}$$

03

$$\begin{cases} 3x_1 + x_2 + 4x_3 + 5x_4 + 3x_5 = 0, \\ 5x_1 - x_3 + 4x_4 + x_5 = 0, \\ 5x_1 + 3x_2 - 2x_3 - 2x_4 - x_5 = 0; \end{cases} \quad \begin{cases} 3x_1 + 2x_2 + 5x_3 + 3x_4 = 1, \\ -x_1 + 3x_2 + 4x_3 - 2x_4 = 5, \\ -2x_1 + 6x_2 + x_3 - 3x_4 = -2. \end{cases}$$

04

$$\begin{cases} x_1 + 5x_2 + 5x_3 + 3x_4 + 4x_5 = 0, \\ 3x_1 + 5x_2 + 2x_3 - x_5 = 0, \\ 3x_1 - 2x_3 - x_3 + x_4 - 3x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 4x_2 + 2x_3 + 4x_4 = 2, \\ x_2 + 5x_3 - x_4 = -1, \\ 6x_1 + 2x_3 - 2x_4 = 2. \end{cases}$$

05

$$\begin{cases} 3x_1 + 2x_2 + 3x_3 + 4x_4 + x_5 = 0, \\ 3x_2 + 3x_3 - 2x_4 + 2x_5 = 0, \\ 2x_1 + 5x_2 + 6x_3 + 3x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + x_2 + 3x_3 + 5x_4 = 3, \\ 4x_1 + 3x_2 + 4x_3 + 5x_4 = -1, \\ -2x_1 + 2x_2 + 5x_3 - 3x_4 = -3. \end{cases}$$

06

$$\begin{cases} 5x_1 + x_2 + 4x_3 + 2x_4 + 2x_5 = 0, \\ 4x_1 + 2x_2 - 2x_3 = 0, \\ 3x_1 + 3x_2 + x_3 + x_5 = 0; \end{cases} \quad \begin{cases} 4x_1 + x_2 + x_3 + x_4 = 4, \\ 5x_1 + 5x_2 + 2x_3 + 4x_4 = 3, \\ 4x_1 - 3x_2 + 4x_3 + 2x_4 = 2. \end{cases}$$

07

$$\begin{cases} 5x_1 + 4x_2 + x_3 + 2x_4 + 5x_5 = 0, \\ x_1 + 4x_2 + 5x_3 - x_4 + 4x_5 = 0, \\ 4x_1 - 3x_2 - x_3 - x_4 - 3x_5 = 0; \end{cases} \quad \begin{cases} 3x_1 + x_2 + x_3 + 4x_4 = 5, \\ x_1 - x_2 + 5x_3 - x_4 = 4, \\ -2x_1 + 5x_2 + 3x_3 - 2x_4 = 6. \end{cases}$$

08

$$\begin{cases} x_1 + x_2 + 3x_3 + x_4 + 2x_5 = 0, \\ -2x_1 - 2x_2 - x_3 + x_4 - x_5 = 0, \\ -2x_1 - x_2 - 2x_4 + 4x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + 4x_2 + x_3 + 2x_4 = 2, \\ 5x_1 + 3x_2 + 3x_3 - 2x_4 = 0, \\ -x_1 + 6x_2 - 2x_3 - 3x_4 = -1. \end{cases}$$

09

$$\begin{cases} 3x_1 + 4x_2 + 3x_3 + 5x_4 + x_5 = 0, \\ 3x_1 + 4x_2 + 2x_3 + 3x_4 + 5x_5 = 0, \\ 4x_1 - 3x_2 + 2x_3 + x_4 + 5x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + 3x_2 + 5x_3 + 3x_4 = 1, \\ x_1 + x_2 + x_3 - 2x_4 = 2, \\ -3x_1 + 4x_3 + 5x_4 = 1. \end{cases}$$

10

$$\begin{cases} 2x_1 + 2x_2 + 3x_3 + x_4 + 2x_5 = 0, \\ -x_1 - 2x_3 + x_4 + 2x_5 = 0, \\ 5x_1 + 4x_2 - 2x_3 + 6x_4 - 3x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + 4x_2 + 5x_3 + 3x_4 = 5, \\ -x_1 + 2x_2 - x_3 + x_4 = -2, \\ 4x_1 + x_2 + x_3 = 4. \end{cases}$$

11

$$\begin{cases} x_1 + 4x_2 + 2x_3 + 3x_4 + 4x_5 = 0, \\ 3x_1 + 2x_2 + 4x_3 + 3x_4 + 3x_5 = 0, \\ 6x_1 - x_2 - 2x_3 + 6x_4 + x_5 = 0; \end{cases} \quad \begin{cases} 4x_1 + 2x_2 + 5x_3 + 5x_4 = 5, \\ 5x_1 + 2x_3 - x_4 = 0, \\ x_1 + 3x_2 + x_3 + 2x_4 = -3. \end{cases}$$

12

$$\begin{cases} 5x_1 + 3x_2 + 5x_3 + x_4 + 3x_5 = 0, \\ 4x_1 + 2x_2 - 2x_3 + x_4 - 2x_5 = 0, \\ 3x_1 - x_2 + 4x_3 + 6x_5 = 0; \end{cases} \quad \begin{cases} x_1 + x_2 + 4x_3 + x_4 = 1, \\ 2x_1 - 2x_2 + 4x_3 - x_4 = -2, \\ x_1 + 2x_2 + x_3 = 2. \end{cases}$$

13

$$\begin{cases} 2x_1 + 5x_2 + 3x_3 + 4x_4 + x_5 = 0, \\ -x_1 + 5x_2 + x_3 - 2x_5 = 0, \\ -2x_1 + 2x_2 + 6x_3 - 3x_4 + 4x_5 = 0; \end{cases} \quad \begin{cases} 4x_1 + 3x_2 + x_3 + 4x_4 = 2, \\ x_1 - 2x_2 + 5x_4 = 1, \\ 2x_1 + x_2 + 5x_4 = 3. \end{cases}$$

14

$$\begin{cases} 5x_1 + x_2 + 4x_3 + x_4 + 4x_5 = 0, \\ 4x_1 + 2x_2 + 5x_4 + 4x_5 = 0, \\ 3x_1 + 4x_2 + x_3 + 3x_4 + 2x_5 = 0; \end{cases} \quad \begin{cases} 4x_1 + 2x_2 + 4x_3 + 3x_4 = 4, \\ -x_1 - x_2 + 3x_3 + 5x_4 = 1, \\ 4x_2 + 3x_3 + 3x_4 = 5. \end{cases}$$

15

$$\begin{cases} 4x_1 + 4x_2 + 4x_3 + 2x_4 + 5x_5 = 0, \\ 2x_1 + 4x_2 - 2x_3 - x_4 + 4x_5 = 0, \\ 4x_1 + 3x_2 + 4x_3 + x_4 + 5x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + 3x_2 + 4x_3 + 4x_4 = 3, \\ 2x_1 - x_2 + 5x_3 - x_4 = 5, \\ 2x_1 + 2x_2 + 4x_3 = 2. \end{cases}$$

16

$$\begin{cases} 4x_1 + 4x_2 + x_3 + 2x_4 + 4x_5 = 0, \\ 2x_1 + x_2 + x_3 - 2x_4 + 2x_5 = 0, \\ -x_1 + 2x_2 + 6x_3 + 4x_4 + 4x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 2x_2 + 4x_3 + x_4 = 1, \\ 4x_1 + 4x_2 - x_3 - x_4 = 0, \\ x_1 + 2x_2 + 6x_3 - x_4 = 1. \end{cases}$$

17

$$\begin{cases} 5x_1 + 3x_2 + 4x_3 + 5x_4 + x_5 = 0, \\ -x_1 - 2x_2 + 2x_3 + 2x_5 = 0, \\ 6x_1 + 4x_2 - 3x_3 = 0; \end{cases} \quad \begin{cases} 3x_1 + 2x_2 + 3x_3 + 2x_4 = 4, \\ 3x_2 - x_3 + 4x_4 = -1, \\ 4x_1 + 3x_2 + 6x_3 + 4x_4 = 6. \end{cases}$$

18

$$\begin{cases} 2x_1 + 5x_2 + 5x_3 + 3x_4 + 4x_5 = 0, \\ x_1 + 2x_2 - x_3 - 2x_4 - x_5 = 0, \\ -2x_1 + 5x_2 - x_3 - 3x_4 + 6x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + 3x_2 + 3x_3 + x_4 = 3, \\ -x_1 + 3x_2 + x_3 + 3x_4 = 0, \\ 3x_1 + x_2 + 6x_3 + 2x_4 = 5. \end{cases}$$

19

$$\begin{cases} 2x_1 + x_2 + 3x_3 + 5x_4 + 4x_5 = 0, \\ 2x_2 + 5x_3 + 2x_4 + 2x_5 = 0, \\ 2x_1 + 2x_2 - 3x_3 - 3x_4 + 5x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 5x_2 + 1x_3 + 2x_4 = 2, \\ -x_1 + x_2 + 2x_3 = 0, \\ -x_3 + 2x_4 = 1. \end{cases}$$

20

$$\begin{cases} 2x_1 + x_2 + 4x_3 + 5x_4 + 5x_5 = 0, \\ 5x_1 + 3x_2 - x_3 + 5x_4 - 2x_5 = 0, \\ 4x_1 + 6x_2 - x_4 + 4x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + x_2 + 5x_3 + x_4 = 4, \\ 4x_1 + 2x_2 + 2x_3 = 3, \\ 3x_2 + x_3 - x_4 = 1. \end{cases}$$

21

$$\begin{cases} 3x_1 + 3x_2 + x_3 + 3x_4 + 2x_5 = 0, \\ x_1 + 3x_2 - x_3 - x_4 = 0, \\ -x_1 + 4x_2 + 2x_3 - x_4 + 5x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 5x_2 + x_3 + 5x_4 = 3, \\ 5x_1 + x_3 + 5x_4 = 4, \\ 3x_1 - 2x_2 + x_3 = 0. \end{cases}$$

22

$$\begin{cases} 4x_1 + 5x_2 + 5x_3 + x_4 + x_5 = 0, \\ x_2 + 3x_3 + 5x_4 - 2x_5 = 0, \\ 5x_1 + 5x_3 - 2x_3 + 5x_4 + 5x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + 5x_2 + 5x_3 + 3x_4 = 1, \\ 4x_2 + 4x_3 + 5x_4 = 2, \\ -3x_1 + 4x_2 + 2x_3 + 5x_4 = 0. \end{cases}$$

23

$$\begin{cases} 5x_1 + 3x_2 + 3x_3 + x_4 + 3x_5 = 0, \\ -x_1 + 5x_2 + 3x_3 + 5x_5 = 0, \\ 6x_1 - 3x_2 - x_3 - 2x_4 + x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + 4x_2 + 4x_3 + x_4 = 1, \\ 4x_1 + x_3 + 3x_4 = 0, \\ 3x_1 - 2x_2 + 6x_3 = 2. \end{cases}$$

24

$$\begin{cases} 2x_1 + 2x_2 + 5x_3 + 4x_4 + 2x_5 = 0, \\ -x_1 + 3x_2 - 2x_5 = 0, \\ -3x_1 + x_2 + 6x_3 = 0; \end{cases} \quad \begin{cases} 5x_1 + x_2 + 2x_3 + x_4 = 2, \\ x_1 + x_2 + x_3 + 3x_4 = 0, \\ x_1 - x_2 + 3x_3 - 2x_4 = -3. \end{cases}$$

25

$$\begin{cases} 3x_1 + 3x_2 + 2x_3 + 4x_4 + 5x_5 = 0, \\ 2x_1 + 4x_2 - 2x_5 = 0, \\ x_2 + 6x_3 + 4x_4 - x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 5x_2 + 2x_3 + 4x_4 = 1, \\ 4x_1 - 2x_2 - x_3 - x_4 = -2, \\ 3x_1 + 6x_2 - 2x_3 = -3. \end{cases}$$

26

$$\begin{cases} 5x_1 + 5x_2 + x_3 + 4x_4 + 4x_5 = 0, \\ -x_1 + 5x_2 + 5x_3 + 3x_4 = 0, \\ 6x_1 - 2x_2 + x_3 + 4x_4 + 3x_5 = 0; \end{cases} \quad \begin{cases} x_1 + 5x_2 + x_3 + x_4 = 1, \\ -2x_1 + 3x_2 - 2x_3 = 1, \\ 3x_2 + 4x_3 - x_4 = 2. \end{cases}$$

27

$$\begin{cases} 4x_1 + 3x_2 + 3x_3 + 3x_4 + 2x_5 = 0, \\ 2x_1 - x_2 + 2x_4 - 2x_5 = 0, \\ 3x_1 + 6x_2 + 5x_3 + x_4 - 3x_5 = 0; \end{cases} \quad \begin{cases} 5x_1 + 2x_2 + x_3 + 5x_4 = 4, \\ -x_1 + x_2 - x_4 = 0, \\ 6x_1 + 5x_2 - 2x_3 + 6x_4 = -3. \end{cases}$$

28

$$\begin{cases} 5x_1 + 2x_2 + x_3 + 5x_4 + 3x_5 = 0, \\ x_1 - x_2 + x_4 + 5x_5 = 0, \\ 2x_1 + 6x_2 + 4x_3 + x_4 - x_5 = 0; \end{cases} \quad \begin{cases} 2x_1 + 4x_2 + 2x_3 + 3x_4 = 3, \\ -x_1 + 3x_2 - x_3 - x_4 = 3, \\ -x_1 + x_3 = 6. \end{cases}$$

29 $\begin{cases} x_1+5x_2+x_3+5x_4+5x_5=0, \\ -2x_1+x_4=0, \\ 4x_1+3x_2+6x_3+5x_5=0; \end{cases}$ $\begin{cases} 2x_1+3x_2+x_3+2x_4=2, \\ -2x_1-2x_3+5x_4=1, \\ x_1+6x_2+x_3+x_4=2. \end{cases}$
30 $\begin{cases} 4x_1+2x_2+x_3+x_4+2x_5=0, \\ 3x_1+2x_2+5x_3+3x_4+4x_5=0, \\ x_1+x_2-3x_3+x_4+3x_5=0; \end{cases}$ $\begin{cases} x_1+3x_2+4x_3+4x_4=4, \\ 4x_2-x_3-2x_4=1, \\ 3x_1-x_4=-3. \end{cases}$

Приложение 5.

№	A	B
1	$\begin{pmatrix} 1 & 2 & 3 \\ 0 & 0 & 0 \\ 0 & 0 & 2 \end{pmatrix}$	$\begin{pmatrix} 0 & 4 \\ 0 & 0 \\ 0 & 6 \end{pmatrix}$
2	$\begin{pmatrix} 0 & 1 & 2 \\ -2 & 3 & 0 \\ 1 & -1 & 1 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 & 0 \\ 1 & 2 & -4 \end{pmatrix}$
3	$\begin{pmatrix} 2 & 1 & -1 \\ 2 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$	$\begin{pmatrix} 1 & 0 \\ 4 & 0 \\ 0 & 0 \end{pmatrix}$
4	$\begin{pmatrix} 1 & 0 & -2 \\ -1 & 1 & 0 \\ 0 & -1 & 2 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 & 0 \\ 1 & 2 & 3 \end{pmatrix}$

5	$\begin{pmatrix} 1 & 3 & -2 \\ 0 & 3 & 0 \\ 0 & 0 & 0 \end{pmatrix}$	$\begin{pmatrix} 4 & 0 \\ 9 & 0 \\ 0 & 0 \end{pmatrix}$
6	$\begin{pmatrix} 1 & -2 & 3 \\ 0 & -1 & 1 \\ 1 & 1 & 0 \end{pmatrix}$	$\begin{pmatrix} 3 & -1 & 0 \\ 2 & -2 & 4 \end{pmatrix}$
7	$\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$	$\begin{pmatrix} 7 & 0 \\ 1 & 0 \\ 2 & 0 \end{pmatrix}$
8	$\begin{pmatrix} 1 & 2 & 3 \\ 0 & 3 & 0 \\ 1 & 1 & 3 \end{pmatrix}$	$\begin{pmatrix} 1 & 8 & 3 \\ 4 & 1 & 0 \end{pmatrix}$
9	$\begin{pmatrix} 5 & 8 & -4 \\ 6 & 9 & -5 \\ 4 & 7 & -3 \end{pmatrix}$	$\begin{pmatrix} 11 & -22 \\ 9 & -27 \\ 13 & -13 \end{pmatrix}$
10	$\begin{pmatrix} 2 & 1 & 1 \\ 1 & 1 & -1 \\ 0 & 3 & -9 \end{pmatrix}$	$\begin{pmatrix} -5 & -4 & 2 \\ 3 & 13 & 7 \end{pmatrix}$
11	$\begin{pmatrix} -2 & 3 & 4 \\ 1 & -2 & 3 \\ -3 & 5 & 1 \end{pmatrix}$	$\begin{pmatrix} 2 & -3 \\ -3 & 4 \\ 5 & -7 \end{pmatrix}$

12	$\begin{pmatrix} 0 & -1 & 1 \\ 4 & 2 & 0 \\ 2 & 0 & 1 \end{pmatrix}$	$\begin{pmatrix} 6 & 1 & 2 \\ -2 & 3 & 0 \end{pmatrix}$
13	$\begin{pmatrix} 6 & 9 & -5 \\ 5 & 8 & -4 \\ 8 & 14 & -6 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 \\ 0 & 0 \\ 1 & 0 \end{pmatrix}$
14	$\begin{pmatrix} 0 & -1 & 1 \\ 4 & 2 & 0 \\ 2 & 0 & 1 \end{pmatrix}$	$\begin{pmatrix} -2 & 3 & 0 \\ 6 & 1 & 2 \end{pmatrix}$
15	$\begin{pmatrix} 5 & 1 & 2 \\ 3 & -3 & -6 \\ 1 & -2 & -4 \end{pmatrix}$	$\begin{pmatrix} -8 & 1 \\ 3 & 1 \\ 9 & 1 \end{pmatrix}$
16	$\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$	$\begin{pmatrix} 7 & 1 & 2 \\ 0 & 0 & 0 \end{pmatrix}$
17	$\begin{pmatrix} 5 & 0 & 1 \\ 2 & -3 & 1 \\ 4 & 0 & 4/5 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 \\ 0 & 1 \\ 0 & 0 \end{pmatrix}$
18	$\begin{pmatrix} 1 & -1 & 1 \\ 0 & 1 & 2 \\ -2 & 3 & 0 \end{pmatrix}$	$\begin{pmatrix} 1 & 2 & -4 \\ 0 & 0 & 0 \end{pmatrix}$

19	$\begin{pmatrix} 1 & 2 & 3 \\ 0 & 3 & 0 \\ 1 & 1 & 3 \end{pmatrix}$	$\begin{pmatrix} 1 & 4 \\ 8 & 1 \\ 3 & 0 \end{pmatrix}$
20	$\begin{pmatrix} 0 & 3 & -9 \\ 2 & 1 & 1 \\ 1 & 1 & -1 \end{pmatrix}$	$\begin{pmatrix} 3 & 13 & 7 \\ -5 & -4 & 2 \end{pmatrix}$
21	$\begin{pmatrix} 2 & 1 & 1 \\ 1 & 1 & -1 \\ 0 & 3 & -9 \end{pmatrix}$	$\begin{pmatrix} -5 & 3 \\ -4 & 13 \\ 2 & 7 \end{pmatrix}$
22	$\begin{pmatrix} -2 & 3 & 0 \\ 0 & 1 & 2 \\ 1 & -1 & 1 \end{pmatrix}$	$\begin{pmatrix} 1 & 2 & -4 \\ 0 & 0 & 0 \end{pmatrix}$
23	$\begin{pmatrix} 1 & -2 & 3 \\ 0 & 0 & 1 \\ 2 & -4 & 5 \end{pmatrix}$	$\begin{pmatrix} 7 & 6 \\ 2 & 1 \\ 0 & -3 \end{pmatrix}$
24	$\begin{pmatrix} -1 & 1 & 0 \\ 1 & 0 & -2 \\ 0 & -1 & 2 \end{pmatrix}$	$\begin{pmatrix} 1 & 2 & 3 \\ 0 & 0 & 0 \end{pmatrix}$
25	$\begin{pmatrix} 1 & 1 & -1 \\ 0 & 2 & 1 \\ 8 & 0 & -12 \end{pmatrix}$	$\begin{pmatrix} 1 & -2 \\ 3 & 4 \\ 0 & 0 \end{pmatrix}$

26	$\begin{pmatrix} 1 & 1 & 0 \\ 1 & -2 & 3 \\ 0 & -1 & 1 \end{pmatrix}$	$\begin{pmatrix} 2 & -2 & 4 \\ 3 & -1 & 0 \end{pmatrix}$
27	$\begin{pmatrix} 2 & -1 & 4 \\ 1 & 0 & 1 \\ 0 & 1 & -2 \end{pmatrix}$	$\begin{pmatrix} -2 & 3 \\ 0 & -1 \\ 2 & -1 \end{pmatrix}$
28	$\begin{pmatrix} 4 & 5 & 6 \\ 7 & 8 & 9 \\ 1 & 2 & 3 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 & 0 \\ 7 & 1 & 2 \end{pmatrix}$
29	$\begin{pmatrix} 3 & 2 & -2 \\ 2 & -3 & 2 \\ 5 & -1 & 0 \end{pmatrix}$	$\begin{pmatrix} 1 & 4 \\ -2 & 1 \\ -1 & 0 \end{pmatrix}$
30	$\begin{pmatrix} 2 & 1 & 1 \\ 0 & 3 & -9 \\ 1 & 1 & -1 \end{pmatrix}$	$\begin{pmatrix} -5 & -4 & 2 \\ 3 & 13 & 7 \end{pmatrix}$

Приложение 6.

01

1) $\overline{a} = (-2,3,5), \overline{m} = (0,1,2),$
$\overline{n} = (2,3,-1), \overline{p} = (2,0,3)$.
2) $\overline{m} = (1,2,-3), \overline{n} = (0,1,2),$
$\overline{a} = 2\overline{m} + 3\overline{n}, \overline{b} = \overline{n} - \overline{m}.$
3) $A(1,4,-1), B(4,4,3), C(8,4,-1)$.

02

1) $\overline{a} = (-3,2,4), \overline{m} = (1,0,3),$
$\overline{n} = (2,-1,0), \overline{p} = (3,-1,5)$.
2) $\overline{m} = (3,2,5), \overline{n} = (-1,3,4),$
$\overline{a} = 5\overline{m} + \overline{n}, \overline{b} = \overline{n} - 2\overline{m}.$
3) $A(2,-1,3), B(5,-1,7), C(9,-1,3)$.

4) $\bar{a} = \bar{p} + 2\bar{q},\ \bar{b} = 3\bar{p} - \bar{q},$
$|\bar{p}| = 1, |\bar{q}| = 2,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{6}.$

5) $\bar{a} = (2,3,1), \bar{b} = (-1,0,1),$
$\bar{c} = (2,2,2).$

6) $A(1,3,6), B = (2,2,1),$
$C(-1,0,1), D = (-4,6,3).$

4) $\bar{a} = 3\bar{p} + \bar{q},\ \bar{b} = \bar{p} - 2\bar{q},$
$|\bar{p}| = 4, |\bar{q}| = 1,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{4}.$

5) $\bar{a} = (3,2,1), \bar{b} = (2,3,4),$
$\bar{c} = (3,1,-1).$

6) $A(-1,2,6,), B = (2,-3,0),$
$C(-10,5,8), D = (-5,2,-4).$

03

1) $\bar{a} = (3,2,-1), \bar{m} = (2,3,0),$
$\bar{n} = (0,5,6), \bar{p} = (-1,2,3).$

2) $\bar{m} = (1,1,3), \bar{n} = (2,-1,4),$
$\bar{a} = 2\bar{m} - \bar{n}, \bar{b} = 2\bar{n} - 4\bar{m}.$

3)
$A(-1,2,5), B(-1,11,5), C(-1,5,9)$

4) $\bar{a} = \bar{p} - 3\bar{q},\ \bar{b} = \bar{p} + 2\bar{q},$
$|\bar{p}| = \frac{1}{5}, |\bar{q}| = 1,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{2}.$

5) $\bar{a} = (1,5,2), \bar{b} = (-1,1,-1),$
$\bar{c} = (1,1,1).$

6) $A(7,2,4), B = (7,-1,-2),$
$C(3,3,1), D = (-4,2,1).$

04

1) $\bar{a} = (5,1,-1), \bar{m} = (3,2,1),$
$\bar{n} = (0,5,2), \bar{p} = (-2,3,5).$

2) $\bar{m} = (1,2,5), \bar{n} = (3,2,1),$
$\bar{a} = \bar{m} + 3\bar{n}, \bar{b} = 6\bar{n} + 2\bar{m}.$

3) $A(3,-1,2), B(6,-1,6), C(10,-1,2)$

4) $\bar{a} = 3\bar{p} - 2\bar{q},\ \bar{b} = \bar{p} + 5\bar{q},$
$|\bar{p}| = 4, |\bar{q}| = \frac{1}{2},\ \angle(\bar{p}, \bar{q}) = \frac{5\pi}{6}.$

5) $\bar{a} = (1,-1,-3), \bar{b} = (3,2,1),$
$\bar{c} = (2,3,4).$

6) $A(2,1,6), B = (-1,5,-2),$
$C(-7,-3,2), D = (-6,-3,6).$

05

1) $\bar{a} = (2,-1,10), \bar{m} = (-1,2,1),$
$\bar{n} = (0,5,7), \bar{p} = (3,2,-1).$

2) $\bar{m} = (5,1,-1), \bar{n} = (1,2,3),$
$\bar{a} = \bar{m} + \bar{n}, \bar{b} = 4\bar{m} + 2\bar{n}.$

3) $A(0,1,2), B(3,2,5), C(7,2,1).$

06

1) $\bar{a} = (5,0,-2), \bar{m} = (3,6,1),$
$\bar{n} = (1,-1,3), \bar{p} = (2,1,0),.$

2) $\bar{m} = (-3,2,5), \bar{n} = (1,2,-1),$
$\bar{a} = 2\bar{m} - 5\bar{n}, \bar{b} = 5\bar{n} - 2\bar{m}.$

3) $A(1,-2,-3), B(4,-2,1), C(8,-2,-3).$

4) $\bar{a} = \bar{p} - 2\bar{q},\ \bar{b} = 2\bar{p} + \bar{q},$
$|\bar{p}| = 2, |\bar{q}| = 3,\ \angle(\bar{p}, \bar{q}) = \frac{3\pi}{4}.$
5) $\bar{a} = (3,3,1), \bar{b} = (1,-2,1),$
$\bar{c} = (1,1,1).$
6) $A(-1,-5,2), B = (-6,0,-3),$
$C(3,6,-3), D = (-10,6,7).$

4) $\bar{a} = \bar{p} + 3\bar{q},\ \bar{b} = \bar{p} - 2\bar{q},$
$|\bar{p}| = 2, |\bar{q}| = 3,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{3}.$
5) $\bar{a} = (3,1,-1), \bar{b} = (-2,-1,0),$
$\bar{c} = (5,2,-1).$
6) $A(0,-1,-1), B = (-2,3,5),$
$C(1,-5,-9), D = (-1,-6,3).$

07

1) $\bar{a} = (3,3,-1), \bar{m} = (1,2,3),$
$\bar{n} = (-1,4,5), \bar{p} = (2,-6,1).$
2) $\bar{m} = (1,3,-2), \bar{n} = (4,4,3),$
$\bar{a} = 3\bar{m} + 2\bar{n}, \bar{b} = \bar{m} - \bar{n}.$
3) $A(0,5,2), B(3,5,6), C(7,5,2).$
4) $\bar{a} = 2\bar{p} - \bar{q},\ \bar{b} = \bar{p} + 3\bar{q},$
$|\bar{p}| = 3, |\bar{q}| = 2,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{2}.$
5) $\bar{a} = (4,3,1), \bar{b} = (1,-2,1),$
$\bar{c} = (2,2,2).$
6) $A(5,2,0), B = (2,5,0),$
$C(1,2,4), D = (-1,1,1).$

08

1) $\bar{a} = (3,2,3), \bar{m} = (-1,3,5),$
$\bar{n} = (0,1,2), \bar{p} = (2,4,-7).$
2) $\bar{m} = (8,-1,1), \bar{n} = (2,1,0),$
$\bar{a} = 5\bar{m} + 2\bar{n}, \bar{b} = 2\bar{n} + 3\bar{m}.$
3) $A(2,-3,4), B(2,6,4), C(2,0,8).$
4) $\bar{a} = 4\bar{p} + \bar{q},\ \bar{b} = \bar{p} - \bar{q},$
$|\bar{p}| = 7, |\bar{q}| = 2,\ \angle(\bar{p}, \bar{q}) = \frac{\pi}{4}.$
5) $\bar{a} = (4,3,1), \bar{b} = (6,7,4),$
$\bar{c} = (2,0,-1).$
6) $A(2,-1,-2), B = (1,2,1),$
$C(5,0,-6), D = (-10,9,-7).$

09

1) $\bar{a} = (3,2,-5), \bar{m} = (1,2,3),$
$\bar{n} = (0,1,-8), \bar{p} = (-3,2,1).$
2) $\bar{m} = (2,1,0), \bar{n} = (3,2,-1),$
$\bar{a} = 2\bar{m} - \bar{n}, \bar{b} = 2\bar{n} - 4\bar{m}.$
3) $A(1,2,3), B(1,5,7), C(1,11,3).$
4) $\bar{a} = \bar{p} - 4\bar{q},\ \bar{b} = 3\bar{p} + \bar{q},$

10

1) $\bar{a} = (1,2,-3), \bar{m} = (2,5,-1),$
$\bar{n} = (3,-1,4), \bar{p} = (0,5,6).$
2) $\bar{m} = (0,1,4), \bar{n} = (-1,2,3),$
$\bar{a} = 3\bar{m} + \bar{n}, \bar{b} = 3\bar{n} - 2\bar{m}.$
3) $A(0,-2,5), B(3,-2,9), C(7,-2,5)$
4) $\bar{a} = \bar{p} + 4\bar{q},\ \bar{b} = 2\bar{p} - \bar{q},$

$|\bar{p}|=1, |\bar{q}|=2,\ \angle(\bar{p},\bar{q})=\frac{\pi}{6}.$

5) $\bar{a}=(3,2,1), \bar{b}=(1,-3,-7),$ $\bar{c}=(1,2,3).$

6) $A(-2,0,-4), B=(-1,7,1),$ $C(4,-8,4)$, $D=(1,-4,6)$.

$|\bar{p}|=7, |\bar{q}|=2,\ \angle(\bar{p},\bar{q})=\frac{\pi}{3}.$

5) $\bar{a}=(3,7,2), \bar{b}=(-2,0,-1),$ $\bar{c}=(2,2,1).$

6) $A(14,4,5), B=(-5,-3,2),$ $C(-2,-6,-3)$, $D=(-2,2,-1)$.

11

1) $\bar{a}=(6,-1,7), \bar{m}=(-1,2,1),$ $\bar{n}=(3,5,6), \bar{p}=(-2,3,-5)$.

2) $\bar{m}=(3,2,5), \bar{n}=(0,1,3),$ $\bar{a}=2\bar{m}+\bar{n}, \bar{b}=4\bar{n}+2\bar{m}.$

3) $A(-1,0,2), B(-1,3,6), C(-1,9,2)$

4) $\bar{a}=3\bar{p}+2\bar{q}, \bar{b}=\bar{p}-\bar{q},$ $|\bar{p}|=10, |\bar{q}|=1,\ \angle(\bar{p},\bar{q})=\frac{\pi}{2}.$

5) $\bar{a}=(1,-2,6), \bar{b}=(1,0,1),$ $\bar{c}=(2,-6,17).$

6) $A(1,2,0), B=(3,0,-3),$ $C(5,2,6)$, $D=(8,4,-9)$.

12

1) $\bar{a}=(1,0,3), \bar{m}=(-4,3,2),$ $\bar{n}=(1,2,-6), \bar{p}=(5,1,0)$.

2) $\bar{m}=(1,2,-1), \bar{n}=(0,1,5),$ $\bar{a}=\bar{m}-3\bar{n}, \bar{b}=6\bar{n}-2\bar{m}.$

3) $A(7,1,-2), B(10,1,2), C(14,1,-2)$.

4) $\bar{a}=4\bar{p}-\bar{q}, \bar{b}=\bar{p}+2\bar{q},$ $|\bar{p}|=5, |\bar{q}|=1,\ \angle(\bar{p},\bar{q})=\frac{\pi}{4}.$

5) $\bar{a}=(6,3,4), \bar{b}=(-1,-2,-1),$ $\bar{c}=(2,1,2).$

6) $A(2,-1,2), B=(1,2,-1),$ $C(3,2,1)$, $D=(-4,2,5)$.

13

1) $\bar{a}=(-2,3,8), \bar{m}=(1,3,5),$ $\bar{n}=(4,-3,2), \bar{p}=(-2,1,7)$.

2) $\bar{m}=(1,3,2), \bar{n}=(-3,2,0),$ $\bar{a}=4\bar{m}-\bar{n}, \bar{b}=4\bar{n}-\bar{m}.$

3) $A(0,-2,1), B(0,1,5), C(0,7,1)$.

4) $\bar{a}=2\bar{p}+\bar{q}, \bar{b}=\bar{p}-2\bar{q},$

14

1) $\bar{a}=(3,-1,4), \bar{m}=(0,1,6),$ $\bar{n}=(2,3,-1), \bar{p}=(1,5,8)$.

2) $\bar{m}=(-1,2,0), \bar{n}=(7,1,4),$ $\bar{a}=2\bar{m}+8\bar{n}, \bar{b}=4\bar{n}+\bar{m}.$

3) $A(6,0,1), B(9,0,5), C(13,0,1)$.

4) $\bar{a}=3\bar{p}-\bar{q}, \bar{b}=\bar{p}+2\bar{q},$

$|\bar{p}|=6, |\bar{q}|=7,\ \angle(\bar{p},\bar{q})=\frac{\pi}{3}.$

5) $\bar{a}=(7,3,4), \bar{b}=(-1,-2,-1),$ $\bar{c}=(4,2,4).$

6) $A(1,1,2), B=(-1,1,3),$ $C(2,-2,4), D=(-1,0,-2).$

$|\bar{p}|=3, |\bar{q}|=4,\ \angle(\bar{p},\bar{q})=\frac{\pi}{3}.$

5) $\bar{a}=(2,3,2), \bar{b}=(4,7,5),$ $\bar{c}=(2,0,-1).$

6) $A(2,3,1), B=(4,1,-2),$ $C(6,3,7), D=(7,5,-3).$

15

1) $\bar{a}=(-1,4,3), \bar{m}=(3,2,5),$ $\bar{n}=(1,-3,2), \bar{p}=(6,7,-1).$

2) $\bar{m}=(-3,5,1), \bar{n}=(0,1,5),$ $\bar{a}=2\bar{m}+6\bar{n}, \bar{b}=3\bar{n}+\bar{m}.$

3) $A(1,2,-1), B(1,5,3), C(1,11,-1).$

4) $\bar{a}=2\bar{p}+3\bar{q},\ \bar{b}=\bar{p}-2\bar{q},$ $|\bar{p}|=2, |\bar{q}|=3,\ \angle(\bar{p},\bar{q})=\frac{\pi}{4}.$

5) $\bar{a}=(5,3,4), \bar{b}=(-1,0,-1),$ $\bar{c}=(4,2,4).$

6) $A(1,1,-1), B=(2,3,1),$ $C(3,2,1), D=(5,9,-8).$

16

1) $\bar{a}=(0,2,3), \bar{m}=(6,1,3),$ $\bar{n}=(-5,2,1), \bar{p}=(3,-2,0).$

2) $\bar{m}=(0,1,4), \bar{n}=(1,2,8),$ $\bar{a}=\bar{m}-\bar{n}, \bar{b}=3\bar{n}+2\bar{m}.$

3) $A(0,-6,5), B(3,-6,9), C(7,-6,5).$

4) $\bar{a}=2\bar{p}-\bar{q},\ \bar{b}=3\bar{p}+\bar{q},$ $|\bar{p}|=4, |\bar{q}|=1,\ \angle(\bar{p},\bar{q})=\frac{\pi}{6}.$

5) $\bar{a}=(3,10,5), \bar{b}=(-2,-2,-3),$ $\bar{c}=(2,4,3).$

6) $A(1,5,-7), B=(-3,6,3),$ $C(-2,7,3(\ )), D=(-4,8,-12).$

17

1) $\bar{a}=(2,7,5), \bar{m}=(-1,0,1),$ $\bar{n}=(3,1,5), \bar{p}=(0,4,7).$

2) $\bar{m}=(2,3,8), \bar{n}=(-1,4,1),$ $\bar{a}=2\bar{m}+3\bar{n}, \bar{b}=3\bar{n}-4\bar{m}.$

3) $A(2,1,3), B(5,1,7), C(9,1,3).$

4) $\bar{a}=5\bar{p}+\bar{q},\ \bar{b}=\bar{p}-3\bar{q},$ $|\bar{p}|=1, |\bar{q}|=2,\ \angle(\bar{p},\bar{q})=\frac{\pi}{3}.$

18

1) $\bar{a}=(-3,4,6), \bar{m}=(2,1,0),$ $\bar{n}=(-1,2,5), \bar{p}=(3,-1,4).$

2) $\bar{m}=(0,1,5), \bar{n}=(-1,4,3),$ $\bar{a}=\bar{m}-3\bar{n}, \bar{b}=6\bar{n}-2\bar{m}.$

3) $A(3,-1,2), B(6,-1,6), C(10,-1,2)$

4) $\bar{a}=7\bar{p}-2\bar{q},\ \bar{b}=\bar{p}+3\bar{q},$ $|\bar{p}|=\frac{1}{2}, |\bar{q}|=2,\ \angle(\bar{p},\bar{q})=\frac{\pi}{2}.$

5) $\bar{a}=(-2,-4,-3)$, $\bar{b}=(4,3,1)$, $\bar{c}=(6,7,4)$.
6) $A(-3,4,-7)$, $B=(1,5,-4)$, $C(-5,-2,0)$, $D=(2,5,4)$.

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1) $\bar{a}=(2,-5,7)$, $\bar{m}=(0,5,1)$, $\bar{n}=(-1,3,2)$, $\bar{p}=(3,2,-4)$.
2) $\bar{m}=(1,3,-5)$, $\bar{n}=(2,3,4)$, $\bar{a}=\bar{m}+2\bar{n}$, $\bar{b}=3\bar{n}-5\bar{m}$.
3) $A(7,-1,0)$, $B(10,-1,4)$, $C(14,-1,0)$
4) $\bar{a}=6\bar{p}-\bar{q}$, $\bar{b}=\bar{p}+\bar{q}$, $|\bar{p}|=3$, $|\bar{q}|=4$, $\angle(\bar{p},\bar{q})=\frac{\pi}{4}$.
5) $\bar{a}=(4,1,2)$, $\bar{b}=(-3,-3,-3)$, $\bar{c}=(2,1,2)$.
6) $A(4,-1,3)$, $B=(-2,1,0)$, $C(0,-5,1)$, $D=(3,2,-6)$.

21

1) $\bar{a}=(-3,4,8)$, $\bar{m}=(2,3,-1)$, $\bar{n}=(1,0,2)$, $\bar{p}=(4,-5,6)$.
2) $\bar{m}=(-1,4,5)$, $\bar{n}=(0,1,2)$, $\bar{a}=3\bar{m}+5\bar{n}$, $\bar{b}=6\bar{m}-\bar{n}$.
3) $A(5,1,1)$, $B(5,4,5)$, $C(5,10,1)$.
4) $\bar{a}=6\bar{p}-\bar{q}$, $\bar{b}=\bar{p}+2\bar{q}$, $|\bar{p}|=8$, $|\bar{q}|=\frac{1}{2}$, $\angle(\bar{p},\bar{q})=\frac{\pi}{3}$.

5) $\bar{a}=(3,1,-1)$, $\bar{b}=(1,0,-1)$, $\bar{c}=(8,3,-2)$.
6) $A(-1,2,-3)$, $B=(4,-1,0)$, $C(2,1,-2)$, $D=(3,4,5)$.

20

1) $\bar{a}=(3,2,-7)$, $\bar{m}=(1,3,5)$, $\bar{n}=(2,-3,4)$, $\bar{p}=(0,1,6)$.
2) $\bar{m}=(1,2,-3)$, $\bar{n}=(4,3,2)$, $\bar{a}=6\bar{m}+\bar{n}$, $\bar{b}=2\bar{m}+4\bar{n}$.
3) $A(-5,0,2)$, $B(-2,0,6)$, $C(2,0,2)$
4) $\bar{a}=10\bar{p}+\bar{q}$, $\bar{b}=3\bar{p}-\bar{q}$, $|\bar{p}|=4$, $|\bar{q}|=1$, $\angle(\bar{p},\bar{q})=\frac{\pi}{6}$.
5) $\bar{a}=(4,1,2)$, $\bar{b}=(9,2,5)$, $\bar{c}=(1,1,-1)$.
6) $A(1,-1,1)$, $B=(-2,0,3)$, $C(2,1,-1)$, $D=(2,-2,-4)$.

22

1) $\bar{a}=(-1,2,-3)$, $\bar{m}=(0,1,2)$, $\bar{n}=(-5,-3,2)$, $\bar{p}=(4,2,-1)$.
2) $\bar{m}=(0,-1,5)$, $\bar{n}=(2,4,6)$, $\bar{a}=\bar{m}-2\bar{n}$, $\bar{b}=4\bar{n}-2\bar{m}$.
3) $A(0,-3,7)$, $B(3,-3,11)$, $C(7,-3,7)$
4) $\bar{a}=3\bar{p}+4\bar{q}$, $\bar{b}=\bar{q}-\bar{p}$, $|\bar{p}|=\frac{5}{2}$, $|\bar{q}|=2$, $\angle(\bar{p},\bar{q})=\frac{\pi}{2}$.

5) $\bar{a}=(5,3,4)$, $\bar{b}=(4,3,3)$, $\bar{c}=(9,5,8)$.
6) $A(1,2,0)$, $B=(1,-1,2)$, $C(0,1,-1)$, $D=(-3,0,1)$.

5) $\bar{a}=(3,4,2)$, $\bar{b}=(1,1,0)$, $\bar{c}=(8,11,8)$.
6) $A(1,0,2)$, $B=(1,2,-1)$, $C(2,-2,1)$, $D=(2,1,0)$.

23

1) $\bar{a}=(6,-1,3)$, $\overline{m}=(2,0,-1)$, $\bar{n}=(-1,2,5)$, $\bar{p}=(1,3,4)$.
2) $\overline{m}=(1,3,2)$, $\bar{n}=(5,-1,3)$, $\bar{a}=\overline{m}+3\bar{n}$, $\bar{b}=\overline{m}-3\bar{n}$.
3) $A(1,-3,1)$, $B(4,-3,5)$, $C(8,-3,1)$
4) $\bar{a}=7\bar{p}+\bar{q}$, $\bar{b}=\bar{p}-3\bar{q}$, $|\bar{p}|=3$, $|\bar{q}|=1$, $\angle(\bar{p},\bar{q})=\frac{3\pi}{4}$.
5) $\bar{a}=(4,-1,-6)$, $\bar{b}=(1,-3,-7)$, $\bar{c}=(2,-1,-4)$.
6) $A(1,2,-3)$, $B=(1,0,1)$, $C(-2,-1,6)$, $D=(0,-5,-4)$.

24

1) $\bar{a}=(3,1,8)$, $\overline{m}=(0,1,2)$, $\bar{n}=(6,-1,3)$, $\bar{p}=(5,3,-2)$.
2) $\overline{m}=(0,1,4)$, $\bar{n}=(1,3,5)$, $\bar{a}=\overline{m}-4\bar{n}$, $\bar{b}=\overline{m}+2\bar{n}$.
3) $A(9,-1,1)$, $B(12,-1,5)$, $C(16,-1,1)$
4) $\bar{a}=\bar{p}+3\bar{q}$, $\bar{b}=3\bar{p}-\bar{q}$, $|\bar{p}|=3$, $|\bar{q}|=5$, $\angle(\bar{p},\bar{q})=\frac{2\pi}{3}$.
5) $\bar{a}=(3,1,0)$, $\bar{b}=(-5,-4,-5)$, $\bar{c}=(4,2,4)$.
6) $A(3,10,-1)$, $B=(-2,3,-5)$, $C(-6,0,-3)$, $D=(1,-1,2)$.

25

1) $\bar{a}=(2,-1,10)$, $\overline{m}=(3,2,0)$, $\bar{n}=(1,4,8)$, $\bar{p}=(-4,5,6)$.
2) $\overline{m}=(-1,1,3)$, $\bar{n}=(2,1,4)$, $\bar{a}=\overline{m}-2\bar{n}$, $\bar{b}=2\bar{n}-\overline{m}$.
3) $A(1,0,4)$, $B(1,3,8)$, $C(1,9,4)$.
4) $\bar{a}=3\bar{p}+\bar{q}$, $\bar{b}=\bar{p}-3\bar{q}$, $|\bar{p}|=7$, $|\bar{q}|=2$, $\angle(\bar{p},\bar{q})=\frac{\pi}{4}$.
5) $\bar{a}=(3,0,3)$, $\bar{b}=(8,1,6)$, $\bar{c}=(1,1,-1)$.

26

1) $\bar{a}=(1,-2,3)$, $\overline{m}=(3,4,5)$, $\bar{n}=(1,6,-3)$, $\bar{p}=(0,1,2)$.
2) $\overline{m}=(1,2,-3)$, $\bar{n}=(0,1,4)$, $\bar{a}=\overline{m}+6\bar{n}$, $\bar{b}=6\overline{m}+\bar{n}$.
3) $A(2,1,-1)$, $B(2,4,3)$, $C(2,10,-1)$
4) $\bar{a}=5\bar{p}-\bar{q}$, $\bar{b}=\bar{p}+\bar{q}$, $|\bar{p}|=5$, $|\bar{q}|=3$, $\angle(\bar{p},\bar{q})=\frac{5\pi}{6}$.
5) $\bar{a}=(1,-1,4)$, $\bar{b}=(1,0,3)$, $\bar{c}=(1,-3,8)$.

6) $A(-1,2,4)$, $B=(-1,-2,-4)$, $C(3,0,3)$, $D=(7,-3,1)$.

27

1) $\overline{a}=(-5,2,0)$, $\overline{m}=(1,1,3)$, $\overline{n}=(2,3,-1)$, $\overline{p}=(6,0,5)$.

2) $\overline{m}=(1,3,-2)$, $\overline{n}=(1,4,5)$, $\overline{a}=2\overline{m}-3\overline{n}$, $\overline{b}=6\overline{n}-4\overline{m}$.

3) $A(-2,1,0)$, $B(-2,4,4)$, $C(-2,10,0)$

4) $\overline{a}=3\overline{p}-4\overline{q}$, $\overline{b}=\overline{p}+3\overline{q}$, $|\overline{p}|=2$, $|\overline{q}|=3$, $\angle(\overline{p},\overline{q})=\frac{\pi}{4}$.

5) $\overline{a}=(6,3,4)$, $\overline{b}=(-1,-2,-1)$, $\overline{c}=(2,1,2)$.

6) $A(1,3,0)$, $B=(4,-1,2)$, $C(3,0,1)$, $D=(-4,3,5)$.

28

1) $\overline{a}=(-6,2,1)$, $\overline{m}=(2,2,-1)$, $\overline{n}=(3,-4,0)$, $\overline{p}=(1,5,7)$.

2) $\overline{m}=(5,-1,3)$, $\overline{n}=(4,4,2)$, $\overline{a}=3\overline{n}+2\overline{m}$, $\overline{b}=2\overline{m}-\overline{n}$.

3) $A(1,9,0)$, $B(1,12,4)$, $C(1,18,0)$.

4) $\overline{a}=6\overline{p}-\overline{q}$, $\overline{b}=5\overline{q}+\overline{p}$, $|\overline{p}|=\frac{1}{2}$, $|\overline{q}|=4$, $\angle(\overline{p},\overline{q})=\frac{5\pi}{6}$.

5) $\overline{a}=(4,1,1)$, $\overline{b}=(-9,-4,-9)$, $\overline{c}=(6,2,6)$.

6) $A(-2,-1,-1)$, $B=(0,3,2)$, $C(3,1,-4)$, $D=(-4,7,3)$.

29

1) $\overline{a}=(2,4,-1)$, $\overline{m}=(0,1,3)$, $\overline{n}=(1,1,4)$, $\overline{p}=(-3,2,5)$.

2) $\overline{m}=(0,1,-4)$, $\overline{n}=(8,2,1)$, $\overline{a}=2\overline{m}+\overline{n}$, $\overline{b}=3\overline{n}+6\overline{m}$.

3). $A(1,-3,0)$, $B(1,0,4)$, $C(1,6,0)$

4) $\overline{a}=2\overline{p}+3\overline{q}$, $\overline{b}=\overline{p}-2\overline{q}$, $|\overline{p}|=2$, $|\overline{q}|=1$, $\angle(\overline{p},\overline{q})=\frac{\pi}{3}$.

5) $\overline{a}=(-3,3,3)$, $\overline{b}=(-4,7,6)$, $\overline{c}=(3,0,-1)$.

6) $A(-3,-5,6)$, $B=(2,1,-4)$, $C(0,-3,-1)$, $D=(-5,2,-8)$.

30

1) $\overline{a}=(-3,0,5)$, $\overline{m}=(3,2,-1)$, $\overline{n}=(0,1,3)$, $\overline{p}=(7,5,2)$.

2) $\overline{m}=(-1,2,3)$, $\overline{n}=(2,3,5)$, $\overline{a}=4\overline{m}+\overline{n}$, $\overline{b}=2\overline{n}+3\overline{m}$.

3) $A(7,0,-1)$, $B(7,3,3)$, $C(7,9,-1)$

4) $\overline{a}=2\overline{p}-3\overline{q}$, $\overline{b}=5\overline{p}+\overline{q}$, $|\overline{p}|=1$, $|\overline{q}|=2$, $\angle(\overline{p},\overline{q})=\frac{\pi}{6}$.

5) $\overline{a}=(-7,10,-5)$, $\overline{b}=(0,-2,-1)$, $\overline{c}=(-2,4,1)$.

6) $A(2,-4,-3)$, $B=(5,-6,0)$, $C(-1,3,-3)$, $D=(-10,-8,7)$.