

Приложение 1.

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

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

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

02

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

03

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

04

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

05

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

06

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

07

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

08

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

09	$\begin{cases} 3x_1 + 4x_2 + 3x_3 + 5x_4 + x_5 = 0, \\ 3x_1 + 4x_2 + 2x_3 + 3x_4 + 5x_5 = 0, \\ 4x_1 - 3x_2 + 2x_3 + x_4 + 5x_5 = 0; \end{cases} \begin{cases} 2x_1 + 3x_2 + 5x_3 + 3x_4 = 1, \\ x_1 + x_2 + x_3 - 2x_4 = 2, \\ -3x_1 + 4x_3 + 5x_4 = 1. \end{cases}$
10	$\begin{cases} 2x_1 + 2x_2 + 3x_3 + x_4 + 2x_5 = 0, \\ -x_1 - 2x_3 + x_4 + 2x_5 = 0, \\ 5x_1 + 4x_2 - 2x_3 + 6x_4 - 3x_5 = 0; \end{cases} \begin{cases} 5x_1 + 4x_2 + 5x_3 + 3x_4 = 5, \\ -x_1 + 2x_2 - x_3 + x_4 = -2, \\ 4x_1 + x_2 + x_3 = 4. \end{cases}$
11	$\begin{cases} x_1 + 4x_2 + 2x_3 + 3x_4 + 4x_5 = 0, \\ 3x_1 + 2x_2 + 4x_3 + 3x_4 + 3x_5 = 0, \\ 6x_1 - x_2 - 2x_3 + 6x_4 + x_5 = 0; \end{cases} \begin{cases} 4x_1 + 2x_2 + 5x_3 + 5x_4 = 5, \\ 5x_1 + 2x_3 - x_4 = 0, \\ x_1 + 3x_2 + x_3 + 2x_4 = -3. \end{cases}$
12	$\begin{cases} 5x_1 + 3x_2 + 5x_3 + x_4 + 3x_5 = 0, \\ 4x_1 + 2x_2 - 2x_3 + x_4 - 2x_5 = 0, \\ 3x_1 - x_2 + 4x_3 + 6x_5 = 0; \end{cases} \begin{cases} x_1 + x_2 + 4x_3 + x_4 = 1, \\ 2x_1 - 2x_2 + 4x_3 - x_4 = -2, \\ x_1 + 2x_2 + x_3 = 2. \end{cases}$
13	$\begin{cases} 2x_1 + 5x_2 + 3x_3 + 4x_4 + x_5 = 0, \\ -x_1 + 5x_2 + x_3 - 2x_5 = 0, \\ -2x_1 + 2x_2 + 6x_3 - 3x_4 + 4x_5 = 0; \end{cases} \begin{cases} 4x_1 + 3x_2 + x_3 + 4x_4 = 2, \\ x_1 - 2x_2 + 5x_4 = 1, \\ 2x_1 + x_2 + 5x_4 = 3. \end{cases}$
14	$\begin{cases} 5x_1 + x_2 + 4x_3 + x_4 + 4x_5 = 0, \\ 4x_1 + 2x_2 + 5x_4 + 4x_5 = 0, \\ 3x_1 + 4x_2 + x_3 + 3x_4 + 2x_5 = 0; \end{cases} \begin{cases} 4x_1 + 2x_2 + 4x_3 + 3x_4 = 4, \\ -x_1 - x_2 + 3x_3 + 5x_4 = 1, \\ 4x_2 + 3x_3 + 3x_4 = 5. \end{cases}$
15	$\begin{cases} 4x_1 + 4x_2 + 4x_3 + 2x_4 + 5x_5 = 0, \\ 2x_1 + 4x_2 - 2x_3 - x_4 + 4x_5 = 0, \\ 4x_1 + 3x_2 + 4x_3 + x_4 + 5x_5 = 0; \end{cases} \begin{cases} 2x_1 + 3x_2 + 4x_3 + 4x_4 = 3, \\ 2x_1 - x_2 + 5x_3 - x_4 = 5, \\ 2x_1 + 2x_2 + 4x_3 = 2. \end{cases}$

16

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

17

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

18

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

19

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

20

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

21

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

22

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

23

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

24

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

25

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

26

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

27

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

28

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

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

02

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

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

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

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

$$\bar{c} = (2, 2, 2).$$

$$6) A(1, 3, 6), B = (2, 2, 1),$$

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

03

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

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

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

$$\bar{a} = 2\bar{m} - \bar{n}, \bar{b} = 2\bar{n} - 4\bar{m}.$$

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

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

$$|\bar{p}| = \frac{1}{5}, |\bar{q}| = 1, \angle(\bar{p}, \bar{q}) = \frac{\pi}{2}.$$

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

$$\bar{c} = (1, 1, 1).$$

$$6) A(7, 2, 4), B = (7, -1, -2),$$

$$C(3, 3, 1), D = (-4, 2, 1).$$

05

$$1) \bar{a} = (2, -1, 10), \bar{m} = (-1, 2, 1),$$

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

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

$$\bar{a} = \bar{m} + \bar{n}, \bar{b} = 4\bar{m} + 2\bar{n}.$$

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

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

$$|\bar{p}| = 4, |\bar{q}| = 1, \angle(\bar{p}, \bar{q}) = \frac{\pi}{4}.$$

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

$$\bar{c} = (3, 1, -1).$$

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

$$C(-10, 5, 8), D = (-5, 2, -4).$$

04

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

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

$$2) \bar{m} = (1, 2, 5), \bar{n} = (3, 2, 1),$$

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

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

$$4) \bar{a} = 3\bar{p} - 2\bar{q}, \bar{b} = \bar{p} + 5\bar{q},$$

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

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

$$\bar{c} = (2, 3, 4).$$

$$6) A(2, 1, 6), B = (-1, 5, -2),$$

$$C(-7, -3, 2), D = (-6, -3, 6).$$

06

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

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

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

$$\bar{a} = 2\bar{m} - 5\bar{n}, \bar{b} = 5\bar{n} - 2\bar{m}.$$

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

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

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

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

$$\bar{c} = (1, 1, 1).$$

$$6) A(-1, -5, 2), B = (-6, 0, -3),$$

$$C(3, 6, -3), D = (-10, 6, 7).$$

07

$$1) \bar{a} = (3, 3, -1), \bar{m} = (1, 2, 3),$$

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

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

$$\bar{a} = 3\bar{m} + 2\bar{n}, \bar{b} = \bar{m} - \bar{n}.$$

$$3) A(0, 5, 2), B(3, 5, 6), C(7, 5, 2).$$

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

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

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

$$\bar{c} = (2, 2, 2).$$

$$6) A(5, 2, 0), B = (2, 5, 0),$$

$$C(1, 2, 4), D = (-1, 1, 1).$$

09

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

$$\bar{n} = (0, 1, -8), \bar{p} = (-3, 2, 1).$$

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

$$\bar{a} = 2\bar{m} - \bar{n}, \bar{b} = 2\bar{n} - 4\bar{m}.$$

$$3) A(1, 2, 3), B(1, 5, 7), C(1, 11, 3).$$

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

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

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

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

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

$$6) A(0, -1, -1), B = (-2, 3, 5),$$

$$C(1, -5, -9), D = (-1, -6, 3).$$

08

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

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

$$2) \bar{m} = (8, -1, 1), \bar{n} = (2, 1, 0),$$

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

$$3) A(2, -3, 4), B(2, 6, 4), C(2, 0, 8).$$

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

$$|\bar{p}| = 7, |\bar{q}| = 2, \angle(\bar{p}, \bar{q}) = \frac{\pi}{4}.$$

$$5) \bar{a} = (4, 3, 1), \bar{b} = (6, 7, 4),$$

$$\bar{c} = (2, 0, -1).$$

$$6) A(2, -1, -2), B = (1, 2, 1),$$

$$C(5, 0, -6), D = (-10, 9, -7).$$

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

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

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

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

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

$$|\bar{p}|=10, |\bar{q}|=1, \angle(\bar{p}, \bar{q})=\frac{\pi}{2}.$$

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

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

13

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

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

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

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

12

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

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

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

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

$$|\bar{p}|=5, |\bar{q}|=1, \angle(\bar{p}, \bar{q})=\frac{\pi}{4}.$$

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

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

14

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

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

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

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

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

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

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

15

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

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

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

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

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

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

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

17

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

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

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

$$4) \bar{a} = 5\bar{p} + \bar{q}, \bar{b} = \bar{p} - 3\bar{q},$$

$$|\bar{p}| = 1, |\bar{q}| = 2, \angle(\bar{p}, \bar{q}) = \frac{\pi}{3}.$$

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

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

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

16

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

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

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

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

$$|\bar{p}| = 4, |\bar{q}| = 1, \angle(\bar{p}, \bar{q}) = \frac{\pi}{6}.$$

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

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

18

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

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

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

$$4) \bar{a} = 7\bar{p} - 2\bar{q}, \bar{b} = \bar{p} + 3\bar{q},$$

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

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

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

19

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

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

$$3) \\ A(7, -1, 0), B(10, -1, 4), C(14, -1, 0)$$

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

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

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

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

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

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

$$3) A(0, -3, 7), B(3, -3, 11), C(7, -3, 7)$$

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

$$5) \bar{a} = (5, 3, 4), \bar{b} = (4, 3, 3), \\ \bar{c} = (9, 5, 8).$$

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

23

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

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

$$3) A(1, -3, 1), B(4, -3, 5), C(8, -3, 1)$$

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

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

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

25

$$1) \bar{a} = (2, -1, 10), \bar{m} = (3, 2, 0), \\ \bar{n} = (1, 4, 8), \bar{p} = (-4, 5, 6).$$

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

$$3) A(1, 0, 4), B(1, 3, 8), C(1, 9, 4).$$

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

$$5) \bar{a} = (3, 0, 3), \bar{b} = (8, 1, 6), \\ \bar{c} = (1, 1, -1).$$

$$5) \bar{a} = (3, 4, 2), \bar{b} = (1, 1, 0), \\ \bar{c} = (8, 11, 8).$$

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

24

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

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

$$3) A(9, -1, 1), B(12, -1, 5), C(16, -1, 1)$$

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

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

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

26

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

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

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

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

$$5) \bar{a} = (1, -1, 4), \bar{b} = (1, 0, 3), \\ \bar{c} = (1, -3, 8).$$

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

27

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

29

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

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

28

- 1) $\bar{a} = (-6,2,1), \bar{m} = (2,2,-1),$
 $\bar{n} = (3,-4,0), \bar{p} = (1,5,7).$
 2) $\bar{m} = (5,-1,3), \bar{n} = (4,4,2),$
 $\bar{a} = 3\bar{n} + 2\bar{m}, \bar{b} = 2\bar{m} - \bar{n}.$
 3) $A(1,9,0), B(1,12,4), C(1,18,0).$
 4) $\bar{a} = 6\bar{p} - \bar{q}, \bar{b} = 5\bar{q} + \bar{p},$
 $|\bar{p}| = \frac{1}{2}, |\bar{q}| = 4, \angle(\bar{p}, \bar{q}) = \frac{5\pi}{6}.$
 5) $\bar{a} = (4,1,1), \bar{b} = (-9,-4,-9),$
 $\bar{c} = (6,2,6).$
 6) $A(-2,-1,-1), B(0,3,2),$
 $C(3,1,-4), D(-4,7,3).$

30

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