1) C_{13}^{11}

2) $x_1 = -1$

$y_1 = x_1 + 2 \quad y_1 = 1$

$y_1 + y_2 + \ldots + y_{40} = 65 + 2 \cdot 40 = 145$ ответ C_{144}^{39}

3) 3^3

4) $a = 0$
$b = 1$
$c = 2$

baabbaaa

$(10011000)_3 \rightarrow x_{10}$

$1 \times 3^4 + 1 \times 3^3 + 0 \times 3^2 + 0 \times 3^1 + 0 \times 3^0$

$= (2295)_{10}$

ответ 2296

5) $A - 209$

$\{10\} - 116$

$\{9\} - 91$

$\{100\} - 59$

$\{90\} - 33$

$\{900\} - 16$

$\{10\}$ или $\{9\} - 2\{100\}$

$116 + 91 - 2(59)$

ответ 89

6) 3780

$3780 - 1 = 3779$

$3779 = 1889 \cdot 2 + 1$

$1889 = 629 \cdot 3 + 2$

$629 = 157 \cdot 4 + 1$

$157 = 31 \cdot 5 + 2$

$31 = 5 \cdot 6 + 1$

$5 = 0 \cdot 7 + 5$

$(512121)!$

5	7654321	6
1	754321	2
2	75431	4
1	7531	5
2	731	7
1	31	3
0	1	1

ответ 624731

Иззина Жозеф Жерар

ИДЗ Вариант 28

Номер	Ответ
1	C_{13}^{11}
2	C_{144}^{30}
3	3^3
4	2296
5	89
6	6245731
7	N = 11 N = 14 I. $C_{20}^{1} - 5C_{14}^{4}$ II. $C_{20}^{4} - 5C_{14}^{9}$
8	$\frac{8}{15}$

7) $x_1\ x_2\ x_3\ x_4\ x_5 \qquad x_i \in [0;6]$

$N = ?$

$x_1 + x_2 + 4 = x_3 + x_4 + x_5$

$x_1 = 6 - a_1$

$x_2 = 6 - a_2$

$x_i = a_i$

$6 - a_1 + 6 - a_2 + 4 = a_3 + a_4 + a_5$

$a_1 + a_2 + a_3 + a_4 + a_5 = 16$

$N = 16 \quad N = 14$

$5 \cdot 6 - 16 = 14$

I. $a_1 + a_2 + a_3 + a_4 + a_5 = 16$

1. $a_i \geq 0 \qquad a_i \in [0;6]$

$C_{16+5-1}^{5-1} = C_{20}^4$

2. $a_i > 6$

$a_i' = a_i - 6$

$a_i' + a_2 + \dots + a_5 = 10$

$C_{10+5-1}^{5-1} = C_{14}^4$

$a_1 + a_2 + \dots + a_5 = 16$

Ответ $C_{20}^4 - 5C_{14}^4$

II. $(1 + x + x^2 + \dots + x^6)^5 = \left(\frac{1-x^7}{1-x}\right)^5 = \frac{(1-x^7)^5}{(1-x)^5}$

$a_2 \in [0;6]$

$\frac{1}{1-x} = 1 + x + x^2 + \dots + x^n$

$\frac{(1-x^7)^5}{(1-x)^5} = (1-x^7)^5 \cdot (1 + x + x^2 + \dots + x^n)^5$

$(1-x^7)^5 = 1 - 5x^7 + \dots$

$(1 + x + x^2 + \dots + x^n + \dots)^5 = C_{20}^4 x^{16} + C_{14}^4 x^9 + \dots$

$(1 - 5x^7)(C_{20}^4 x^{16} + C_{14}^4 x^9) = (C_{20}^4 - 5C_{14}^4) x^{16}$

ответ $C_{20}^4 - 5C_{14}^4$