Задача № 16.

Найти НОД многочленов с помощью алгоритма Евклида.

1.

$f(x) = x^6 - 2x^3 - 4x^2 - 8x - 3,$

$g(x) = 3x^4 - 4x^3 + 8x^2 - 5x - 4;$

2.

$f(x) = x^7 + 3x^6 - 11x^5 + 15x^2 + 2x + 10,$

$g(x) = x^6 + 5x^5 - x^4 - 3x^3 - 10x^2 - x - 5;$

3.

$f(x) = -12x^5 + 28x^4 - 17x^3 - 27x^2 + 22x - 4,$

$g(x) = -6x^2 + 5x - 1;$

4.

$f(x) = 14x^6 - 24x^5 + 38x^4 + 15x^3 - 123x^2 + 56x + 10,$

$g(x) = 14x^4 - 24x^3 + 66x^2 - 33x - 5;$

5.

$f(x) = 3x^5 + 4x^4 - 4x^3 - 6x^2 + x + 2,$

$g(x) = 3x^4 + 7x^3 - 7x - 3;$

6.

$f(x) = 2x^5 + 21x^4 + 51x^3 - 41x^2 - 47x + 26,$

$g(x) = 2x^4 + 23x^3 + 72x^2 + 20x - 31;$

7.

$f(x) = 3x^5 + 3x^4 - 3x^3 - 6x - 3,$

$g(x) = 3x^4 + 2x^3 + x^2 + 2x - 2;$

8.

$f(x) = 3x^6 - 21x^4 + 24x^3 - 21x + 21,$

$g(x) = 3x^5 - 7x^3 + 3x^2 - 7;$

9.

$f(x) = 3x^5 + 5x^4 + 6x^3 + 6x^2 + 2x + 1,$

$g(x) = x^3 + x^2 + x + 1;$

10.

$f(x) = -4x^4 + x^3 + x^2 + 15x - 13,$

$g(x) = 2x^4 - 7x + 5;$

11.

$f(x) = -10x^4 - x^3 - 10x^2 + 14x + 7,$

$g(x) = -2x^4 - 2x^2 + 3x + 1;$

12.

$f(x) = x^4 + x^3 - 3x^2 + 2x - 1,$

$g(x) = x^3 - 3x^2 + 5x - 3;$

13.

$f(x) = 4x^5 + 2x^4 + 4x^3 + 11x^2 - 4x + 3,$

$g(x) = 4x^4 + 2x^3 + 9x;$

14.

$f(x) = x^5 + 2x^4 - 4x^3 - x^2 + 6x - 4,$

$g(x) = x^4 + 3x^3 - x^2 - 3x + 2;$

15.

$f(x) = x^5 - 4x^4 - 31x^3 + 125x^2 - 100x + 384,$

$g(x) = \frac{1}{2}x^3 - 2x^2 - 17x + 68$

16.

$f(x) = 3x^5 + 4x^4 - 4x^3 - 6x^2 + x + 2,$

$g(x) = 3x^4 + 7x^3 - 7x - 3;$

17.

$f(x) = 2x^5 + x^3 + 2x^2 - 6x - 3,$

$g(x) = 2x^4 - 2x^3 - x^2 + 3x - 3;$

18.

$f(x) = 2x^6 + 2x^5 + 2x^4 + 7x^3 + 2x^2 + 4x + 5,$

$g(x) = 2x^5 + 2x^4 + 4x^3 + 5x^2 + 2;$

19.

$f(x) = x^5 - 2x^4 + x^3 + x - 1,$

$g(x) = x^4 - 2x^3 + x^2 - x + 1;$

20.

$f(x) = 2x^5 - 4x^4 - 4x^3 - x^2 + x - 1,$

$g(x) = x^4 - 3x^3 + x^2 - x - 2;$

21.

$f(x) = x^5 - 3x^4 + 3x^3 - x^2 - 2x + 2,$

$g(x) = x^4 + 2x^3 – 3x^2 – x + 1;$

22.

$f(x) = 4x^5 + x^4 –3x^3+2x^2–6x+5,$

$g(x) = 4x^4 + x^3 + 10x;$

23.

$f(x)=x^5 – 7x^4 +19x^3–25x^2+16x–4,$

$g(x) = x^4 – 3x^3 + 3x^2 – x;$

24.

$f(x) = 3x^5 + 2x^4 +4x^3–x^2–4x+8,$

$g(x) = x^4 – x^3 + 2x^2 – 2x – 4;$

25

$f(x) = 2x^5 + 3x^4 – 13x^3 –10x^2+21x+6,$

$g(x) = 2x^4 + 5x^3 – 8x^2 – 19x + 2;$

26.

$f(x) = x^5 + 3x^4+2x^3+6x^2,$

$g(x) = x^4 + 2x^3 – 3x^2 + 4x;$

27.

$f(x) = 12x^5 – 34x^4 – 15x^3 + 16x^2 – 5x – 5,$

$g(x) = 12x^4 – 22x^3 + 19x^2 + x + 7;$

28.

$f(x) = x^5 – 8x^4 +2x^3–5x^2+3x–1,$

$g(x) = x^4 – 2x^3 + 4x^2 – x + 2;$

29.

$f(x) = x^5 + 5x^4 + 3x^3 – 9x^2,$

$g(x) = x^4 + 3x^3 + 3x^2 + 9x;$

30.

$f(x) = 4x^5–6x^4+10x^3–7x^2+2x–3,$

$g(x) = 2x^4 – 3x^3 + 4x^2 – 2x – 1;$

31.

$f(x) = x^5 + x^4 – 3x^3 + 9x^2,$

$g(x) = x^4 + 2x^3 – 8;$

32.

$f(x) = 2x^6 + 3x^5 – 12x^4 + 22x^3 – 9x^2 – 11x – 5,$

$g(x) = 2x^4 + 5x^3 - 11x^2 - x + 5;$

33.

$f(x) = x^6 - 7x^5 + x^4 - 2x^3 - 35x^2 + 5x - 35,$

$g(x) = x^4 - 7x^2 + x - 7;$

34.

$f(x) = x^6 + 3x^5 + 3x^4 + 7x^3 + 3x^2 + 4x + 1,$

$g(x) = x^4 + 3x^3 + 2x^2 + 4x + 1;$

35.

$f(x) = x^6 - 4x^5 + 14x^4 - 38x^3 + 49x^2 - 75x + 25,$

$g(x) = x^4 - 4x^3 + 7x^2 - 11x + 5;$

36.

$f(x) = -2x^6 + 4x^5 + 9x^4 - 19x^3 - 6x^2 + 15x + 2,$

$g(x) = -2x^4 + 4x^3 + 5x^2 - 9x - 2.$

Дополнительно:

1) $x^5 + x^3 + x^2 + 2x + 1$, $x^5 + 2x^4 + x^3 + 1$ над полем Z_3;

2) $x^5 + x^3 + x^2 + 2x + 1$, $x^5 + 2x^4 + x^3 + 1$ над полем Q.

3) $x^5 + 4x^4 + 3x^3 + x^2 + 4$ и $x^4 + 4x^3 + 4x^2 + 4$ над полем Z_3;

4) $x^5 + 4x^4 + 3x^3 + x^2 + 4$ и $x^4 + 4x^3 + 4x^2 + 4$ над полем Z_5;

5) $x^5 + 4x^4 + 3x^3 + x^2 + 4$ и $x^4 + 4x^3 + 4x^2 + 4$ над полем Q.

6) $x^5 - x^4 - 2x^3 + 2x^2 + 9x - 9$ и $x^5 + x^4 + 4x^3 - x^2 + x - 6$ над полем Z_3;

7) $x^5 - x^4 - 2x^3 + 2x^2 + 9x - 9$ и $x^5 + x^4 + 4x^3 - x^2 + x - 6$ над полем Z_5;

8) $x^5 - x^4 - 2x^3 + 2x^2 + 9x - 9$ и $x^5 + x^4 + 4x^3 - x^2 + x - 6$ над полем Z_7;

9) $x^5 - x^4 - 2x^3 + 2x^2 + 9x - 9$ и $x^5 + x^4 + 4x^3 - x^2 + x - 6$ над полем Q.