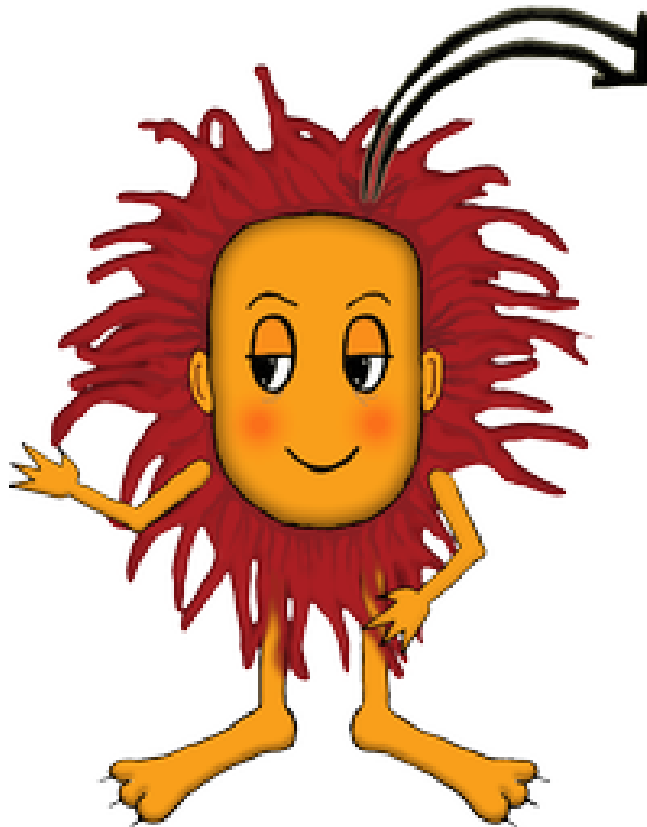


Velika logična pošast



Hornerjev algoritem

Dan je polinom $P(x)$.
S Hornerjevim algoritmom ga moramo deliti z $x-a$.
Izračunaj količnik $Q(x)$ in ostanek,
ki je vrednost danega polinoma pri a .

1.

$$4x^4 + 3x^3 + x^2 + x + 3, \quad x=1.$$

2.

$$4x^2 + x, x=0.$$

3.

$$4x^4 + 3x^3, x=0.$$

4.

$$3x^2 - 2, x=0.$$

5.

$$x^2 - x - 2, x=2.$$

6.

$$2x^2 + 3x + 1, x=3.$$

7.

$$3x^5 + 3x^4 - 2x^3 + x^2 - 2x + 2, x=-3.$$

8.

$$x^3 + x - 2, x=-1.$$

9.

$$x^5 + x^4 - x^3 - 2x^2 + 3x, x=1.$$

10.

$$2x^2 + 1, x=-1.$$

11.

$$2x^4 - x^3 + 3x^2 - 2x, x=0.$$

12.

$$4x^3 + x^2 + 3x, x=0.$$

13.

$$2x^2 + 2x + 2, x=-3.$$

14.

$$x^4 + 3x^3 + x + 2, x=-2.$$

15.

$$4x^5 + 2x^4 + 3x^3 + 3x^2 - x + 3, x=-1.$$

16.

$$3x^2 + 2x - 1, x=0.$$

17.

$$4x^5 + 2x^4 + 3x^3 + x^2 - 2x + 3, x=-2.$$

18.

$$3x^3 - x^2 + 2x - 2, x=-1.$$

19.

$$4x^5 - x^3 - x^2 + 2, x=2.$$

20.

$$4x^4 + x^3 + 3x^2 - 2x + 2, x = -3.$$

21.

$$4x^2 + 2, x = 2.$$

22.

$$3x^2 + x + 2, x = 0.$$

23.

$$x^4 - x^3 - 2x^2 + 2x + 3, x = -3.$$

24.

$$x^2 + 3x + 1, x = -1.$$

25.

$$4x^3 + 3x^2 + 2x - 2, x = 2.$$

26.

$$4x^2 + 3, x = -1.$$

27.

$$3x^4 + x^3 + 2x^2 - 2x - 1, x = 1.$$

28.

$$4x^3 - 2x^2 - 2x - 2, x = 0.$$

29.

$$3x^2 + 2x, x = -1.$$

30.

$$2x^3 - x^2 - 2x + 2, x = -2.$$

31.

$$x^2 + 1, x = 3.$$

32.

$$2x^3 - 2x^2 - x + 1, x = 1.$$

33.

$$x^2 + 3x, x = -3.$$

34.

$$4x^2 + 3x - 1, x = -3.$$

35.

$$4x^3 - 2, x = -3.$$

36.

$$4x^3 + x^2 + x - 2, x = 2.$$

37.

$$3x^4 + 2x, x = 3.$$

38.

$$x^4 - 2x^3 - 2x^2 + x + 2, x=3.$$

39.

$$3x^3 + x^2 + 2x + 3, x=-2.$$

40.

$$4x^2 + 1, x=2.$$

41.

$$x^2 - 2x - 2, x=-3.$$

42.

$$2x^5 + 2x^4 + x^3 + 1, x=2.$$

43.

$$2x^3 - 2, x=3.$$

44.

$$x^2 + 2x - 2, x=3.$$

45.

$$3x^3 + x^2 + 3x - 1, x=1.$$

46.

$$x^3 - x + 3, x=0.$$

47.

$$3x^5 + x^4 + 3x^3 - x^2 + 2x + 2, x=0.$$

48.

$$2x^3 - 2x^2 + 3x - 2, x=-1.$$

49.

$$2x^5 - 2x^4 + x^3 - x^2 + x + 2, x=-3.$$

50.

$$4x^3 - x^2 + 2x + 2, x=3.$$

Rešitve:

1.

$$P(x) = 4x^4 + 3x^3 + x^2 + x + 3$$

	4	3	1	1	3
1	4	4	7	8	9
	4	7	8	9	12

$$P(1) = 12$$

$$Q(x) = 4x^3 + 7x^2 + 8x + 9$$

2.

$$P(x) = 4x^2 + x$$

	4	1	0
0		0	0
	4	1	0

$$P(0) = 0$$

$$Q(x) = 4x + 1$$

3.

$$P(x) = 4x^4 + 3x^3$$

	4	3	0	0	0
0		0	0	0	0
	4	3	0	0	0

$$P(0) = 0$$

$$Q(x) = 4x^3 + 3x^2$$

4.

$$P(x) = 3x^2 - 2$$

	3	0	-2
0		0	0
	3	0	-2

$$P(0) = -2$$

$$Q(x) = 3x$$

5.

$$P(x) = x^2 - x - 2$$

	1	-1	-2
2		2	2
	1	1	0

$$P(2) = 0$$

$$Q(x) = x + 1$$

6.

$$P(x) = 2x^2 + 3x + 1$$

	2	3	1
3		6	27
	2	9	28

$$P(3) = 28$$

$$Q(x) = 2x + 9$$

7.

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

	3	3	-2	1	-2	2
-3		-9	18	-48	141	-417
	3	-6	16	-47	139	-415

$$P(-3) = -415$$

$$Q(x) = 3x^4 - 6x^3 + 16x^2 - 47x + 139$$

8.

$$P(x) = x^3 + x - 2$$

	1	0	1	-2
-1		-1	1	-2
	1	-1	2	-4

$$P(-1) = -4$$

$$Q(x) = x^2 - x + 2$$

9.

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

	1	1	-1	-2	3	0
1		1	2	1	-1	2
	1	2	1	-1	2	2

$$P(1) = 2$$

$$Q(x) = x^4 + 2x^3 + x^2 - x + 2$$

10.

$$P(x) = 2x^2 + 1$$

	2	0	1
-1		-2	2
	2	-2	3

$$P(-1) = 3$$

$$Q(x) = 2x - 2$$

11.

$$P(x) = 2x^4 - x^3 + 3x^2 - 2x$$

	2	-1	3	-2	0
0		0	0	0	0
	2	-1	3	-2	0

$$P(0) = 0$$

$$Q(x) = 2x^3 - x^2 + 3x - 2$$

12.

$$P(x) = 4x^3 + x^2 + 3x$$

	4	1	3	0
0		0	0	0
	4	1	3	0

$$P(0) = 0$$

$$Q(x) = 4x^2 + x + 3$$

13.

$$P(x) = 2x^2 + 2x + 2$$

	2	2	2
-3		-6	12
	2	-4	14

$$P(-3) = 14$$

$$Q(x) = 2x - 4$$

14.

$$P(x) = x^4 + 3x^3 + x + 2$$

	1	3	0	1	2
-2		-2	-2	4	-10
	1	1	-2	5	-8

$$P(-2) = -8$$

$$Q(x) = x^3 + x^2 - 2x + 5$$

15.

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

	4	2	3	3	-1	3
-1		-4	2	-5	2	-1
	4	-2	5	-2	1	2

$$P(-1) = 2$$

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

16.

$$P(x) = 3x^2 + 2x - 1$$

	3	2	-1
0		0	0
	3	2	-1

$$P(0) = -1$$

$$Q(x) = 3x + 2$$

17.

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

	4	2	3	1	-2	3
-2		-8	12	-30	58	-112
	4	-6	15	-29	56	-109

$$P(-2) = -109$$

$$Q(x) = 4x^4 - 6x^3 + 15x^2 - 29x + 56$$

18.

$$P(x) = 3x^3 - x^2 + 2x - 2$$

	3	-1	2	-2
-1		-3	4	-6
	3	-4	6	-8

$$P(-1) = -8$$

$$Q(x) = 3x^2 - 4x + 6$$

19.

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

	4	0	-1	-1	0	2
2		8	16	30	58	116
	4	8	15	29	58	118

$$P(2) = 118$$

$$Q(x) = 4x^4 + 8x^3 + 15x^2 + 29x + 58$$

20.

$$P(x) = 4x^4 + x^3 + 3x^2 - 2x + 2$$

	4	1	3	-2	2
-3		-12	33	-108	330
	4	-11	36	-110	332

$$P(-3) = 332$$

$$Q(x) = 4x^3 - 11x^2 + 36x - 110$$

21.

$$P(x) = 4x^2 + 2$$

	4	0	2
2		8	16
	4	8	18

$$P(2) = 18$$

$$Q(x) = 4x + 8$$

22.

$$P(x) = 3x^2 + x + 2$$

	3	1	2
0		0	0
	3	1	2

$$P(0) = 2$$

$$Q(x) = 3x + 1$$

23.

$$P(x) = x^4 - x^3 - 2x^2 + 2x + 3$$

	1	-1	-2	2	3
-3		-3	12	-30	84
	1	-4	10	-28	87

$$P(-3) = 87$$

$$Q(x) = x^3 - 4x^2 + 10x - 28$$

24.

$$P(x) = x^2 + 3x + 1$$

	1	3	1
-1		-1	-2
	1	2	-1

$$P(-1) = -1$$

$$Q(x) = x + 2$$

25.

$$P(x) = 4x^3 + 3x^2 + 2x - 2$$

	4	3	2	-2
2		8	22	48
	4	11	24	46

$$P(2) = 46$$

$$Q(x) = 4x^2 + 11x + 24$$

26.

$$P(x) = 4x^2 + 3$$

	4	0	3
-1		-4	4
	4	-4	7

$$P(-1) = 7$$

$$Q(x) = 4x - 4$$

27.

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

	3	1	2	-2	-1
1		3	4	6	4
	3	4	6	4	3

$$P(1) = 3$$

$$Q(x) = 3x^3 + 4x^2 + 6x + 4$$

28.

$$P(x) = 4x^3 - 2x^2 - 2x - 2$$

	4	-2	-2	-2
0		0	0	0
	4	-2	-2	-2

$$P(0) = -2$$

$$Q(x) = 4x^2 - 2x - 2$$

29.

$$P(x) = 3x^2 + 2x$$

	3	2	0
-1		-3	1
	3	-1	1

$$P(-1) = 1$$

$$Q(x) = 3x - 1$$

30.

$$P(x) = 2x^3 - x^2 - 2x + 2$$

	2	-1	-2	2
-2		-4	10	-16
	2	-5	8	-14

$$P(-2) = -14$$

$$Q(x) = 2x^2 - 5x + 8$$

31.

$$P(x) = x^2 + 1$$

	1	0	1
3		3	9
	1	3	10

$$P(3) = 10$$

$$Q(x) = x + 3$$

32.

$$P(x) = 2x^3 - 2x^2 - x + 1$$

	2	-2	-1	1
1		2	0	-1
	2	0	-1	0

$$P(1) = 0$$

$$Q(x) = 2x^2 - 1$$

33.

$$P(x) = x^2 + 3x$$

	1	3	0
-3		-3	0
	1	0	0

$$P(-3) = 0$$

$$Q(x) = x$$

34.

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

	4	3	-1
-3		-12	27
	4	-9	26

$$P(-3) = 26$$

$$Q(x) = 4x - 9$$

35.

$$P(x) = 4x^3 - 2$$

	4	0	0	-2
-3		-12	36	-108
	4	-12	36	-110

$$P(-3) = -110$$

$$Q(x) = 4x^2 - 12x + 36$$

36.

$$P(x) = 4x^3 + x^2 + x - 2$$

	4	1	1	-2
2		8	18	38
	4	9	19	36

$$P(2) = 36$$

$$Q(x) = 4x^2 + 9x + 19$$

37.

$$P(x) = 3x^4 + 2x$$

	3	0	0	2	0
3		9	27	81	249
	3	9	27	83	249

$$P(3) = 249$$

$$Q(x) = 3x^3 + 9x^2 + 27x + 83$$

38.

$$P(x) = x^4 - 2x^3 - 2x^2 + x + 2$$

	1	-2	-2	1	2
3		3	3	3	12
	1	1	1	4	14

$$P(3) = 14$$

$$Q(x) = x^3 + x^2 + x + 4$$

39.

$$P(x) = 3x^3 + x^2 + 2x + 3$$

	3	1	2	3
-2		-6	10	-24
	3	-5	12	-21

$$P(-2) = -21$$

$$Q(x) = 3x^2 - 5x + 12$$

40.

$$P(x) = 4x^2 + 1$$

	4	0	1
2		8	16
	4	8	17

$$P(2) = 17$$

$$Q(x) = 4x + 8$$

41.

$$P(x) = x^2 - 2x - 2$$

	1	-2	-2
-3		-3	15
	1	-5	13

$$P(-3) = 13$$

$$Q(x) = x - 5$$

42.

$$P(x) = 2x^5 + 2x^4 + x^3 + 1$$

	2	2	1	0	0	1
2		4	12	26	52	104
	2	6	13	26	52	105

$$P(2) = 105$$

$$Q(x) = 2x^4 + 6x^3 + 13x^2 + 26x + 52$$

43.

$$P(x) = 2x^3 - 2$$

	2	0	0	-2
3		6	18	54
	2	6	18	52

$$P(3) = 52$$

$$Q(x) = 2x^2 + 6x + 18$$

44.

$$P(x) = x^2 + 2x - 2$$

	1	2	-2
3		3	15
	1	5	13

$$P(3) = 13$$

$$Q(x) = x + 5$$

45.

$$P(x) = 3x^3 + x^2 + 3x - 1$$

	3	1	3	-1
1		3	4	7
	3	4	7	6

$$P(1) = 6$$

$$Q(x) = 3x^2 + 4x + 7$$

46.

$$P(x) = x^3 - x + 3$$

	1	0	-1	3
0		0	0	0
	1	0	-1	3

$$P(0) = 3$$

$$Q(x) = x^2 - 1$$

47.

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

	3	1	3	-1	2	2
0		0	0	0	0	0
	3	1	3	-1	2	2

$$P(0) = 2$$

$$Q(x) = 3x^4 + x^3 + 3x^2 - x + 2$$

48.

$$P(x) = 2x^3 - 2x^2 + 3x - 2$$

	2	-2	3	-2
-1		-2	4	-7
	2	-4	7	-9

$$P(-1) = -9$$

$$Q(x) = 2x^2 - 4x + 7$$

49.

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

	2	-2	1	-1	1	2
-3		-6	24	-75	228	-687
	2	-8	25	-76	229	-685

$$P(-3) = -685$$

$$Q(x) = 2x^4 - 8x^3 + 25x^2 - 76x + 229$$

50.

$$P(x) = 4x^3 - x^2 + 2x + 2$$

	4	-1	2	2
3		12	33	105
	4	11	35	107

$$P(3) = 107$$

$$Q(x) = 4x^2 + 11x + 35$$