

**15. ožujka 2017. od 09:00 do 11:00**

# 2017 natjecanje iz informatike **Državno**

Državno natjecanje / Osnovna škola (8. razred)  
Algoritmi (Logo)

## **SLUŽBENI TEST PODACI**



Agencija za odgoj i obrazovanje  
Education and Teacher Training Agency



HRVATSKI SAVEZ  
INFORMATIČARA



Ministarstvo znanosti,  
obrazovanja i sporta



HRVATSKA  
ZAJEDNICA  
TEHNIČKE  
KULTURE



## Zadatak 1: Bill

30 bodova

	Primjer	Slika	Bodovi
<b>Test 1</b>	CS BILL 200 200 0 0	Slika 1.1	6
<b>Test 2</b>	CS BILL 50 200 50 0	Slika 1.2	6
<b>Test 3</b>	CS BILL 300 100 50 0	Slika 1.3	6
<b>Test 4</b>	CS BILL 200 200 50 57	Slika 1.4	6
<b>Test 5</b>	CS BILL 50 300 20 50	Slika 1.5	6

**Napomena:** bodovi se dodjeljuju ako je slika ispravno nacrtana i nije se pojavila nikakva greška.

## Zadatak 2: Kutija

40 bodova

	Primjer	Slika	Bodovi
<b>Test 1</b>	CS KUTIJA 80 120 150 45	Slika 2.1	4
<b>Test 2</b>	CS KUTIJA 40 100 100 45	Slika 2.2	4
<b>Test 3</b>	CS KUTIJA 60 150 120 45	Slika 2.3	4
<b>Test 4</b>	CS KUTIJA 70 160 50 45	Slika 2.4	4
<b>Test 5</b>	CS KUTIJA 90 150 100 10	Slika 2.5	4
<b>Test 6</b>	CS KUTIJA 70 180 120 50	Slika 2.6	4
<b>Test 7</b>	CS KUTIJA 40 200 100 30	Slika 2.7	4
<b>Test 8</b>	CS KUTIJA 50 190 140 60	Slika 2.8	4
<b>Test 9</b>	CS KUTIJA 100 100 100 40	Slika 2.9	4
<b>Test 10</b>	CS KUTIJA 60 140 160 80	Slika 2.10	4

**Napomena:** bodovi se dodjeljuju ako je slika ispravno nacrtana i nije se pojavila nikakva greška.



# Zadatak 3: DNA

60 bodova

	Primjer	Slika	Bodovi
<b>Test 1</b>	CS DNA 180 100 0 [[ ]]	Slika 3.1	4
<b>Test 2</b>	CS DNA 180 35 0 [[ ] [ ] [ ]]	Slika 3.2	4
<b>Test 3</b>	CS DNA 130 80 30 [[ ] [ ]]	Slika 3.3	4
<b>Test 4</b>	CS DNA 45 100 25 [[ ] [ ] [ ] [ ]]	Slika 3.4	4
<b>Test 5</b>	CS DNA 75 60 40 [[ ] [ ] [ ]]	Slika 3.5	4
<b>Test 6</b>	CS DNA 145 102 50 [[A G C T]]	Slika 3.6	4
<b>Test 7</b>	CS DNA 90 94 40 [[A A A A G G G]]	Slika 3.7	4
<b>Test 8</b>	CS DNA 80 45 50 [[ ] [A G C T] [ ] [T C G A]]	Slika 3.8	4
<b>Test 9</b>	CS DNA 70 56 90 [[A] [C C] [G G G] [T T T T]]	Slika 3.9	4
<b>Test 10</b>	CS DNA 115 50 25 [[A G G] [ ] [T] [T G G] [C G G A T T A]]	Slika 3.10	4

**Napomena:** bodovi se dodjeljuju ako je slika ispravno nacrtana i nije se pojavila nikakva greška.



## Zadatak 4: Muhe

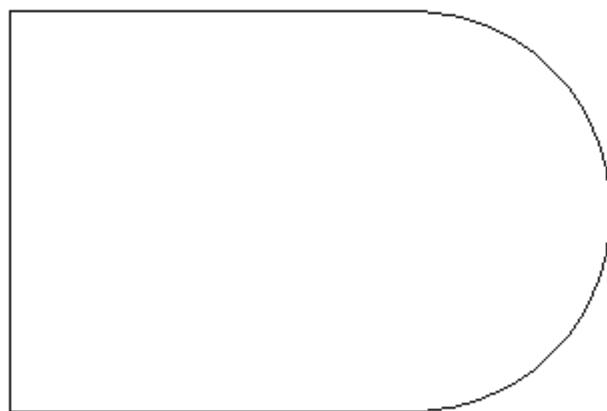
70 bodova

	<b>Primjer</b>	<b>Slika</b>	<b>Bodovi</b>
<b>Test 1</b>	CS PR MUHE [[28 -74] [-54 -132]] 315.378573780782	Slika 4.1	7
<b>Test 2</b>	CS PR MUHE [[40 -141] [84 64]] 658.359989367519	Slika 4.2	7
<b>Test 3</b>	CS PR MUHE [[47 35] [-5 88] [72 -42]] 474.431036505834	Slika 4.3	7
<b>Test 4</b>	CS PR MUHE [[0 0] [0 100] [100 0]] 444.063058585152	Slika 4.4	7
<b>Test 5</b>	CS PR MUHE [[65 109] [-130 63] [-95 -78]] 772.830600808456	Slika 4.5	7
<b>Test 6</b>	CS PR MUHE [[-23 84] [-69 -50] [-6 -139] [8 54] [-10 64] [140 -6]] 741.664202788727	Slika 4.6	7
<b>Test 7</b>	CS PR MUHE [[91 33] [-147 18] [114 53] [125 51] [68 29] [-56 -19] [54 -1]] 860.342810047251	Slika 4.7	7
<b>Test 8</b>	CS PR MUHE [[-63 -58] [3 75] [-86 116] [81 -102] [135 57] [-82 80] [67 11] [6 -88] [-22 -125] [-47 60]] 869.912529816548	Slika 4.8	7
<b>Test 9</b>	CS PR MUHE [[79 70] [-81 -43] [-94 -9] [-32 -121] [47 11] [-82 -122] [76 -27] [64 -15] [-25 -144] [3 -126] [-119 -49] [-90 19] [-29 132] [-61 -62]] 866.731009714086	Slika 4.9	7
<b>Test 10</b>	CS PR MUHE [[72 -73] [36 -55] [-16 -78] [-15 11] [-26 99] [-36 -102] [139 41] [-26 -33] [86 -5] [-123 26] [-139 -53] [-19 -139] [131 -45] [-62 130] [60 -92]] 921.629719363445	Slika 4.10	7

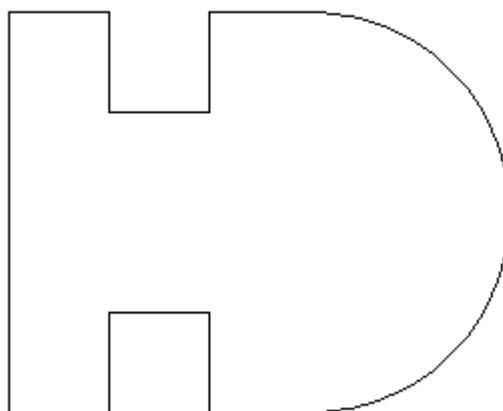
**Napomena:** bodovi se dodjeljuju ako je slika ispravno nacrtana, ispis je točan i nije se pojavila nikakva greška. Ako je točna samo slika, dodjeljuje se 4 boda po test podatku. Ako je točan samo ispis, dodjeljuje se 3 boda po test podatku. Ako je ispis točan, ali se pojavila pogreška jer program ne vraća vrijednost koristeći OP, dodjeljuje se 1 bod manje (6 ako je točna slika ili 2 ako slika nije točna).



## Slike 1: Bill



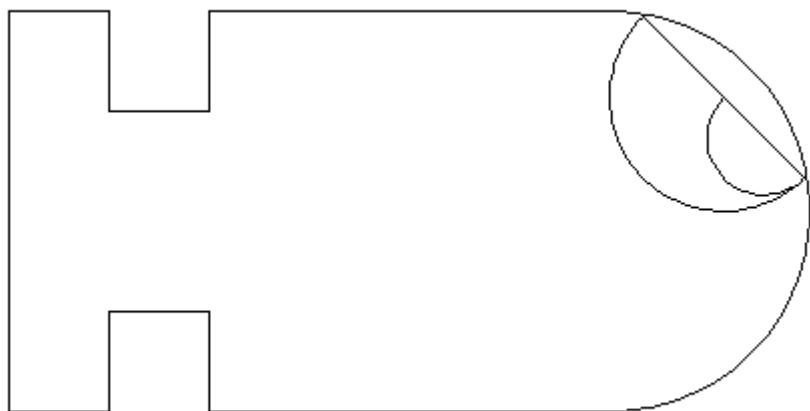
Slika 1.1



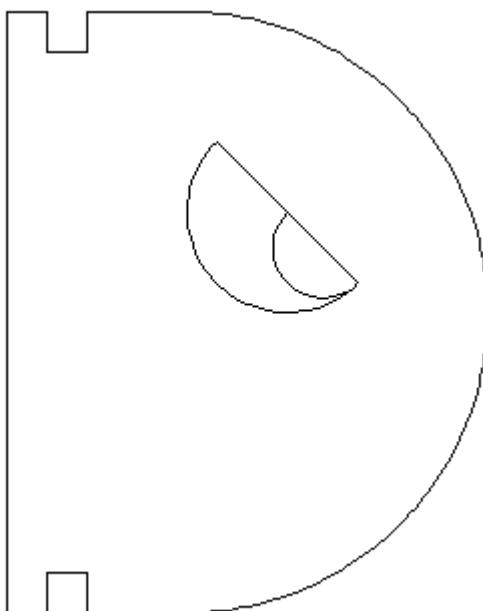
Slika 1.2



Slika 1.3

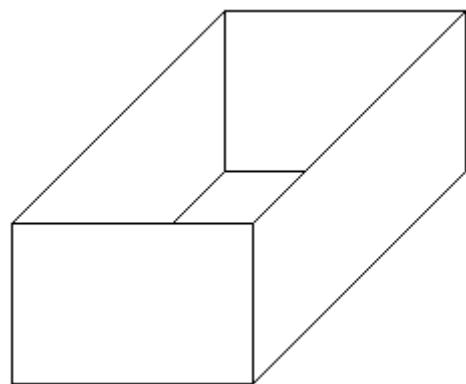


Slika 1.4

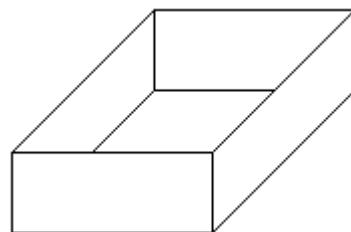


Slika 1.5

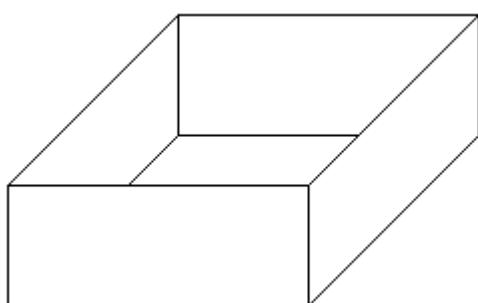
## Slike 2: Kutija



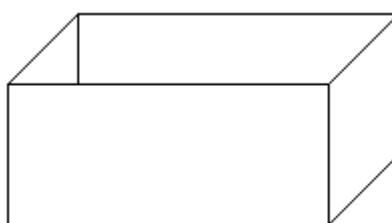
Slika 2.1



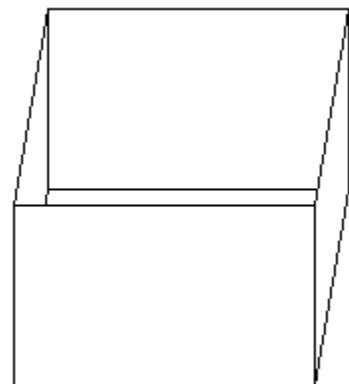
Slika 2.2



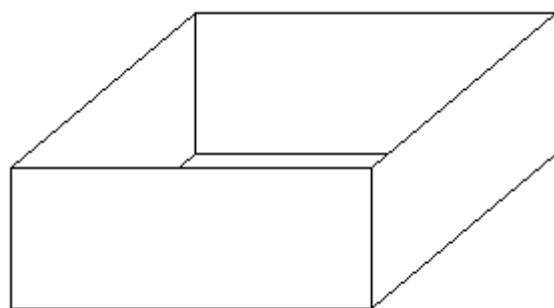
Slika 2.3



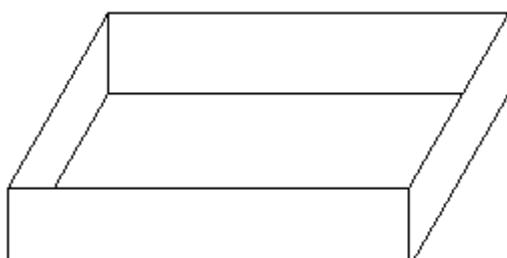
Slika 2.4



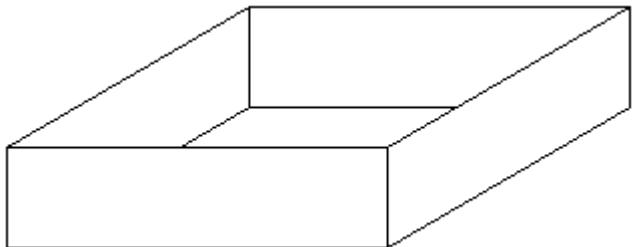
Slika 2.5



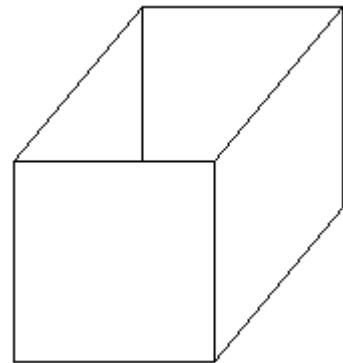
Slika 2.6



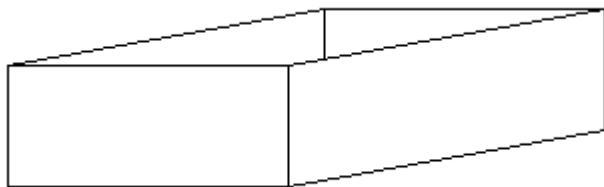
Slika 2.7



Slika 2.8

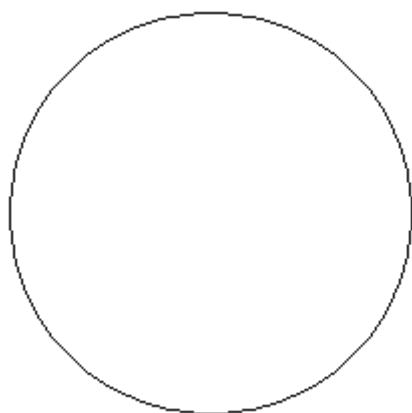


Slika 2.9



Slika 2.10

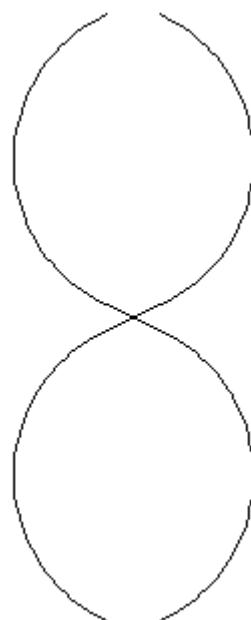
## Slike 3: DNA



Slika 3.1



Slika 3.2



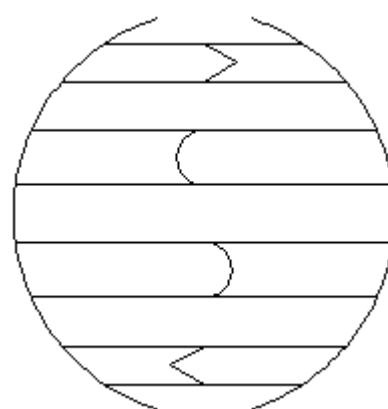
Slika 3.3



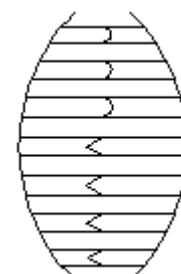
Slika 3.4



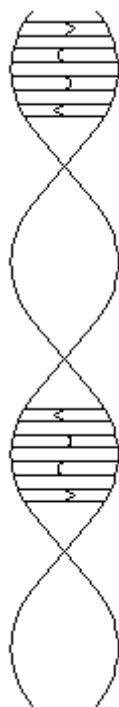
Slika 3.5



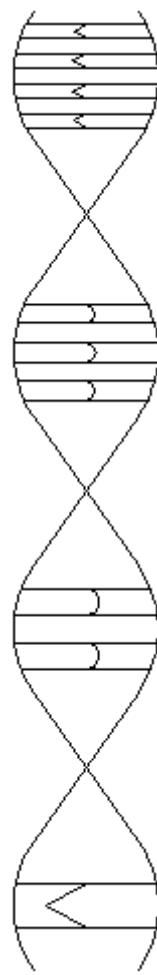
Slika 3.6



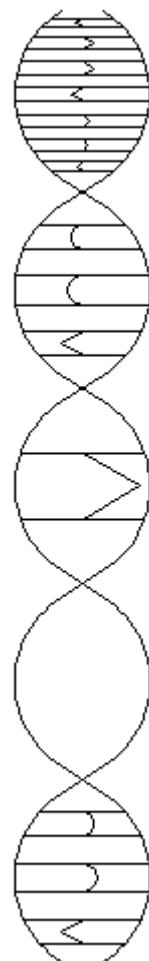
Slika 3.7



Slika 3.8

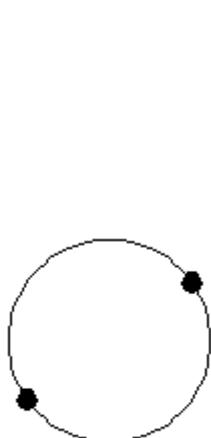


Slika 3.9

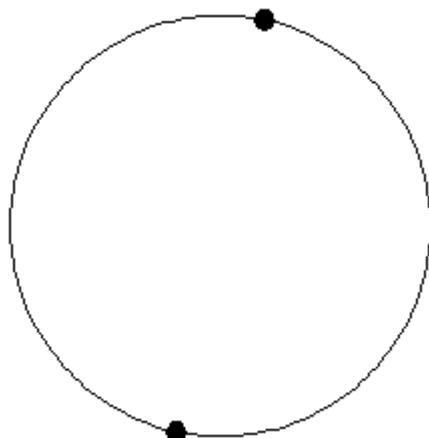


Slika 3.10

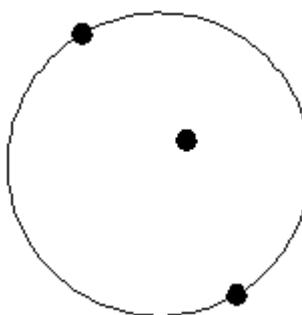
## Slike 4: Muhe



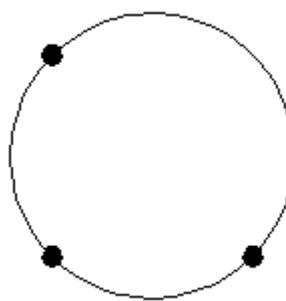
Slika 4.1



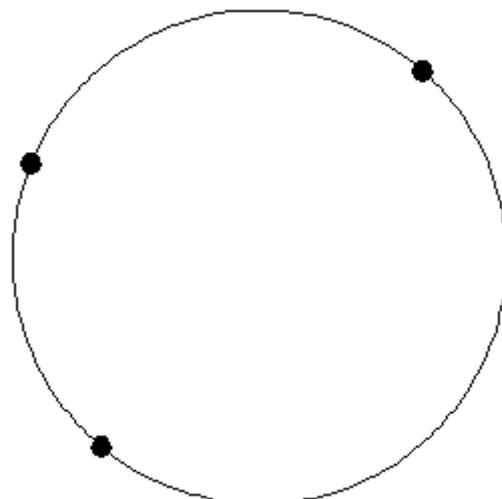
Slika 4.2



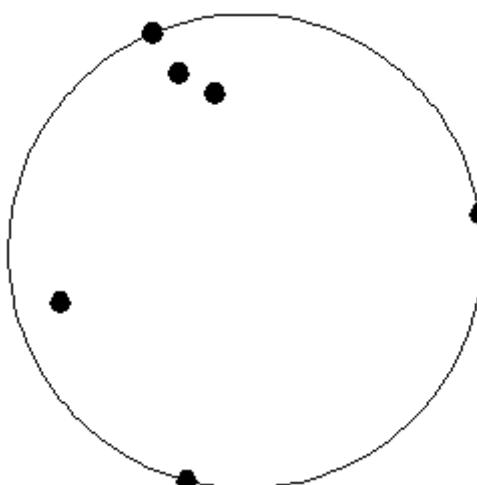
Slika 4.3



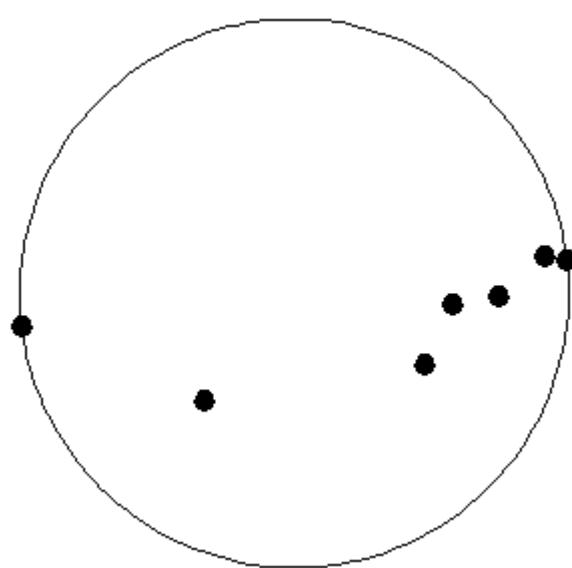
Slika 4.4



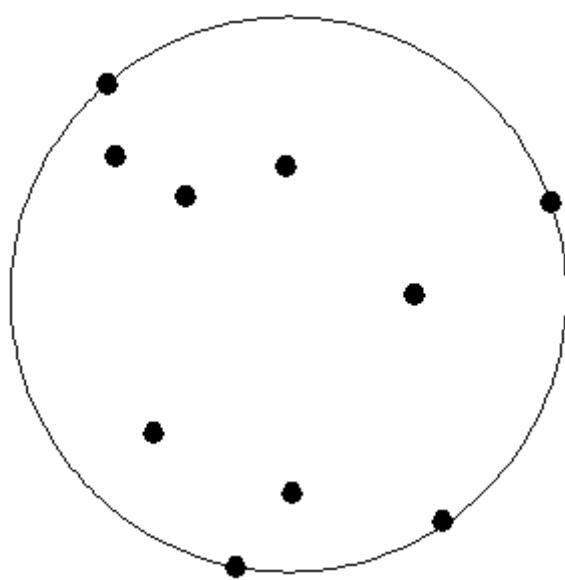
Slika 4.5



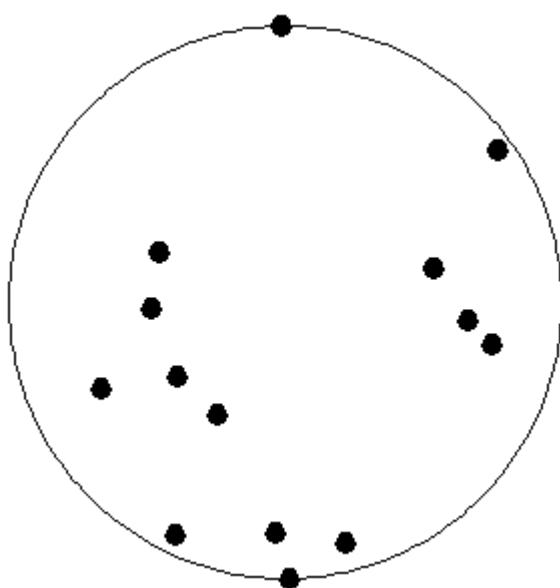
Slika 4.6



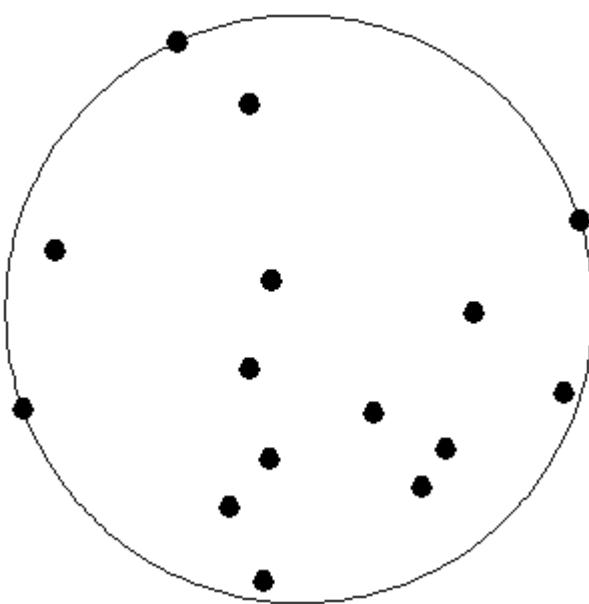
Slika 4.7



Slika 4.8



Slika 4.9



Slika 4.10